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# MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,  
Mining, Contracting, Engineering, Building, and General  
Business Interests of the South and Southwest

Vol. 61  
No. 15

ESTABLISHED 1882

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Single Copy 15 Cents

## *In This Issue:*

The Mississippi River Problem a  
National One.

Scientific Gardening in Louisiana.

Reclamation of Land by Drainage.

Great Tennessee Railway and  
Power Plan.

Immigrants in Colonies.

Alphabetical Index, Page 122.  
Classified Index, Pages 116 to 121.  
Classified Opportunities, Pages 82 and 83.

BALTIMORE, APRIL 18, 1912

# CLINCHFIELD COAL

**CLEAN**



**LUMPY**

"NEVER SHORT OF CARS"

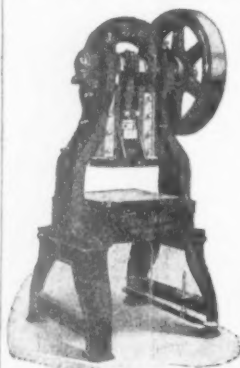
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Also the Largest Line of  
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is one of the first requisites of business success. A handsome exterior of plant is evidence of the high standard demanded in the business ethics of today.

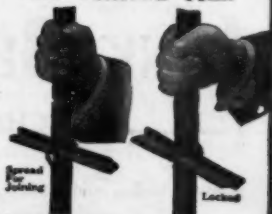
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are fireproof and indestructible. After the initial expense Detroit-Fenestra costs nothing in renewals or repairs, and lessens lighting bills and maintenance charges.

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We believe we have reached the acme of efficiency and economical service in the Columbia Mazda lamp; we know these lamps may serve you well.

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of General Electric Company  
Established 1899 ST. LOUIS, MO.

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DURABLE AND ECONOMICAL

They have made a world-renowned record for economical handling of material at the Panama Canal. Prominent contractors know that Western dump cars can be dumped and righted by fewer men in less time than required for any other car. That is economy.

Western Dump Cars are made of the best material obtainable, and therefore cost more to manufacture, but the long life of the cars and the big saving in handling material will return the extra cost to the purchaser many times over.

Our catalog will tell you all about the different sizes and styles of Western Dump Cars.

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It stands for highest quality and best workmanship at  
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Insist on **PRATT & CADY Valves**  
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Made of Steel with brazed joints  
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Also makers of Everlasting Steel

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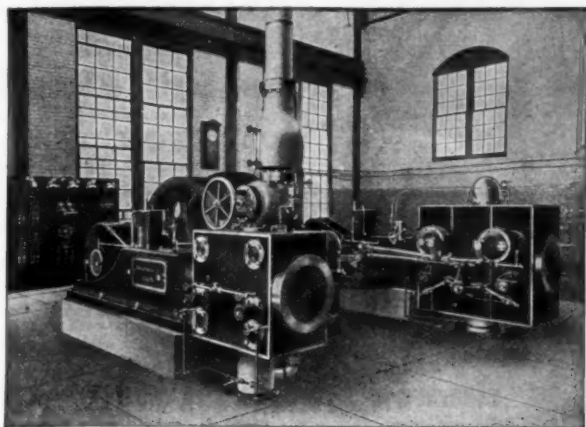
*Write for Booklets*

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Complete Steam Plants a Specialty

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## THE Griffith & Wedge Co.

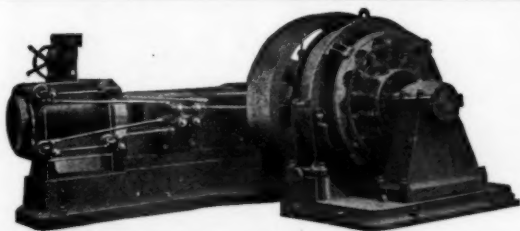
Established 1840

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Manufacturers of

**The Ohio Corliss Engine**

Send for Catalogue.



**YOU MUST NOT NEGLECT** quiet running and cleanliness in your electric generating unit.

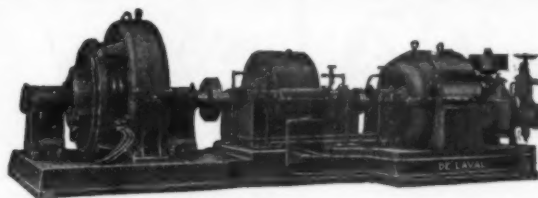
A noisy engine is most objectionable, and one that throws oil would seem to us as intolerable.

**RIDGWAY ENGINES** are all that may be desired in this respect. They are designed and built to fulfill the most exacting requirements of building architects. We can point with pride to plant upon plant where Ridgway Engines constitute the "show equipment" of the establishment, and this without any desire to be egotistical on our part.

Aside from these characteristics, Ridgway Engines regulate with precision, no matter how fluctuating the load, and when combined with a Ridgway Generator produce the most gratifying results.

Where lights and elevators operate from the same generator, your voltage will be practically constant. This is an important point.

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## No Compromise on Speed

All types of steam turbines, except the De Laval, impose some compromise in the matter of speed, when directly connected to electric generators and other machinery. Generally the turbine is run too slow, and the machine too fast. Particularly is this true of direct-current machines, which, due to difficulties in commutator construction, insulation, etc., cannot be built to run at the speeds most desirable for the turbine.

A De Laval Turbine solves all speed difficulties at one stroke by using the simple and efficient expedient of a gear and pinion, which permits the highest efficiency for the turbine and the most suitable construction for the driven machine. As for the durability, all the gear-cutting machines now in the world could not in five years replace the De Laval Gears in use, showing conclusively that the average life is much greater than that.

We are prepared to make full guarantees and invite the most rigid specifications.

Ask for our new catalog No. D-45.

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STEAM TURBINE COMPANY

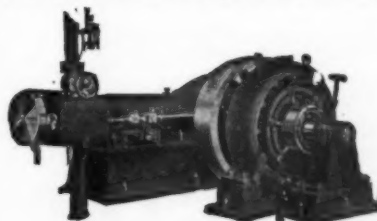
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68

## Phoenix Iron Works Company

BUILDERS OF

**Automatic  
Cut-off  
Engines**



ALSO

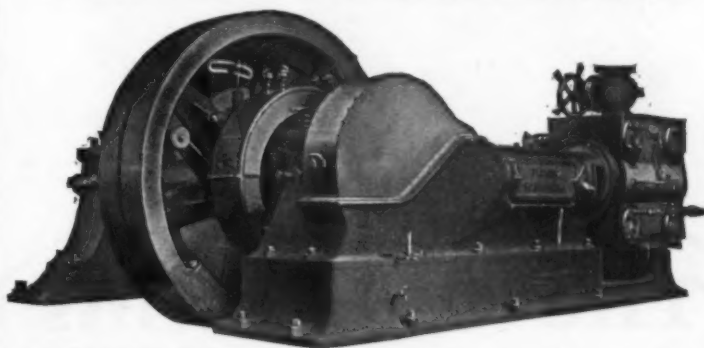
**Boilers, Heaters, Tanks and Gas Condensers.**

General Offices and Works,

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**Harrisburg Foundry & Machine Works, Harrisburg, Pa.**

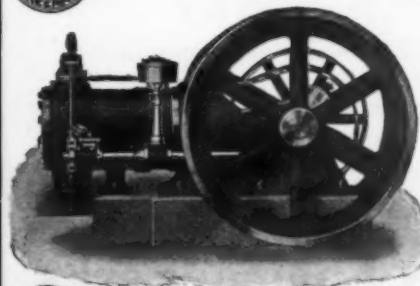
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Makes getting a day load easy for the small station.

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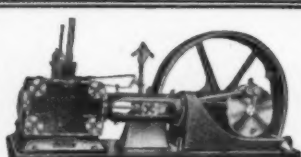
Full details and illustrated Bulletin No. 23 on request.



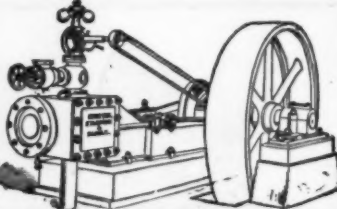
**Bogart Gas Power Engineering Co.**  
BUFFALO, N. Y.







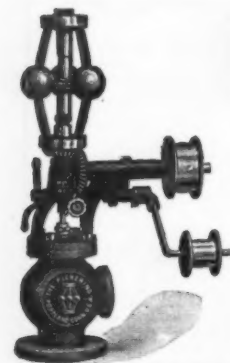
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We build a larger number of this type than anyone else in America. Shaft governor Engines.  
**BOILERS**—large finely equipped works.  
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**Southern Gasoline Engines**  
We make an improved heavy duty gasoline engine of all sizes for all purposes.  
**Agency Contracts Still Open**  
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For Steam Engines, Turbines, Gas Engines and Mechanical Control.

## "THE GOVERNOR WITHOUT JOINTS" PICKERING

Directness of Action Gives  
Greater Efficiency Maximum Durability

### BECAUSE—

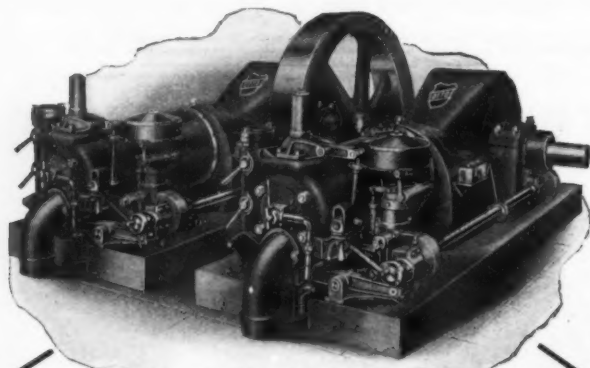
Absence of joints not only insures closer regulation when installed, but equal efficiency under continued duty, for lost motion cannot result with absence of joints. Stability in Action and Durability in continued duty effects economy, whether Electric Light Service, Saw Milling, or Dredging and Ditching.

WIDE RANGE SPEED CHANGER  
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## The Otto Twins

are introduced to you as the latest type of Otto Gas Engine construction. These throttling governor engines are built in single cylinders in the following sizes:

50, 60, 80, 100, 110, 125, 150 H. P.

IN TWIN CYLINDERS:

100, 120, 160, 200, 220, 250, 300 H. P.

Otto Bulletin No. 10 contains much information of practical value to every manufacturer. You should have the last word in gas engine practice.

If interested in smaller units, request copy of Bulletins 3 and 7, all free upon request.

**The Otto Gas Engine Works**

3221 Walnut St., PHILADELPHIA, PA.

## Southwark Foundry & Machine Co.

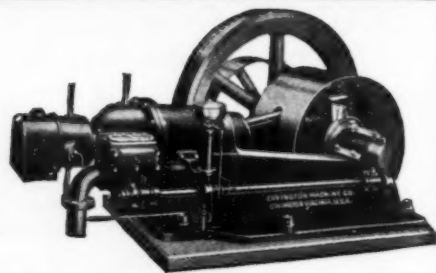
PHILADELPHIA, PA.

Steam and Hydraulic Engineers

**COMPLETE POWER PLANTS**

ENGINES—TURBINES—CONDENSERS

ASK YOUR  
CONSULTING  
ENGINEER



*Dependable—Durable—Economical*

Covington Machine Co. Main Office and Works: Covington, Va.

**COVINGTON OIL ENGINES**

## THE PRIMM OIL ENGINE

OPERATES ON  
Crude, Fuel, Gas or Solar Oils, Distillate,  
Kerosene or  
Gasoline.



Two cycle type.  
Steady as a clock.  
Perfectly dependable  
for any purpose.  
Write for catalog and  
name of nearest representative.

That for week—Our engines run.

The Power Mfg. Co.  
Cor. Greenlawn Ave. and C. & E. R. R.  
LIMA, OHIO

## GAS PRODUCERS

The Akerlund Soft Coal Producer is Reliable and Efficient

TWO TYPES:  
POWER AND FURNACE

STANDRAD GAS POWER CO., Walton Bldg., ATLANTA, GA.

## HEADQUARTERS

FOR ALL THINGS ELECTRICAL

At a Little Less Than You Pay Elsewhere Prompt Service

**LEE ELECTRIC COMPANY**

BALTIMORE, MD.



# The Effect of Storage Battery Gases on Health and on Steel

## LETTER No. 6

Several years ago, an ex-Navy Officer, who received a sword from Congress for conspicuous bravery in one of the engagements of our war with Spain, was asked if he would volunteer his services in the event of hostilities.

"That would depend entirely on the nature of the duty," he replied. "If I could be reasonably sure, either of complete annihilation, or absolute safety, I would go. The probability of 'passing out' does not worry me, but I do draw the line on becoming an invalid or cripple—a burden to myself and family for the remainder of my days."

Exactly! No one chooses to become an invalid.

A man who, in the excitement of combat, with its attendant forgetfulness of personal safety, gives up his life in the performance of duty, is pronounced a hero, and has statues erected to his memory. But the one who sacrifices his health on the altar of duty is shelved, and becomes a nonentity.

Nature has provided us with a very sensitive detector of unwholesome odors. Everyone prefers to breathe pure air, rather than sewer gas. While all odors that are unpleasant are not necessarily harmful, the majority are. When irritation of the mucous membrane, indicated by violent coughing and sore throat, is produced by inhaling a gas, the ultimate deleterious effect upon the lungs, and resultant ill-health, are too apparent to need comment.

In the manufacture of lead-sulphuric acid types of batteries, the Forming Room is located as far away from the remainder of the Plant as it is possible to place it. Powerful exhaust fans are employed to remove the fumes. A superintendent who would locate this forming room within twenty feet of a punch press department, or a stock room, and enclose it by a wire netting, would get no further than the preliminary sketch of the plans. He would be looking for another position.

Since the erection of the Factory of the Edison Storage Battery, four years ago, the Forming Room, wherein several thousand cells are being charged and discharged all the time, has been separated from the Punch Press Room, Stock Room, Assembly Department, and Shipment Department, by wire partitions only. The electrical instruments and other devices on the switchboards in this room are untarnished. A large assortment of brass, steel, and other metal in the Stock Room shows no corrosion. There is not a ventilating fan on the floor. Between 200 and 300 men are at work there. Not one of them has noticed the slightest odor.

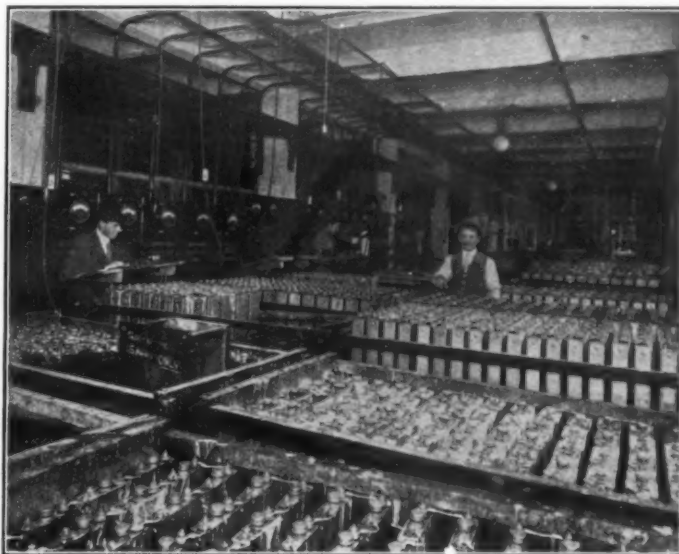
The explanation is exceedingly simple.

When a storage battery is charged, hydrogen gas forms on the negative plates, and oxygen gas on the positives. These gases, in the form of minute bubbles, rise to the surface of the solution and, being lighter than air, float away. Being formed in and subsequently passing through the

them and deposit their cargo of acid or alkali, or they burst and accomplish the same result.

The gas vent of a lead type cell is open and the bubbles may therefore pass through freely and away.

The vent of the Edison Cell is a check valve. To get out, the gases must lift this valve, by pressure formed within the otherwise hermetically



FORMING ROOM OF THE EDISON STORAGE BATTERY CO.

sealed steel containing can. In doing so, the great majority of the little bubbles are burst, and the potash drains back into the cell. A few of them get by this check valve when it lifts, and float away. (Even if all of them were allowed to get out, no harm would result. Potash is an excellent disinfectant.)

Sulphuric acid attacks steel. Potash preserves it. Anyone at all familiar with machine shop practice knows that a saturated solution of soda or potash is flowed over the tool and stock when turning heavy pieces of steel in a lathe. No one would think of using a sulphuric acid solution for this work.

Specifications covering the installation of lead-sulphuric acid storage batteries on board ship stipulate lead-lined rooms to retain them, and lead-lined ventilating pipes with specially constructed and installed motors, to operate the exhaust fans. But lead-lined rooms and lead-lined ventilators do not keep the gases within bounds when they reach the deck.

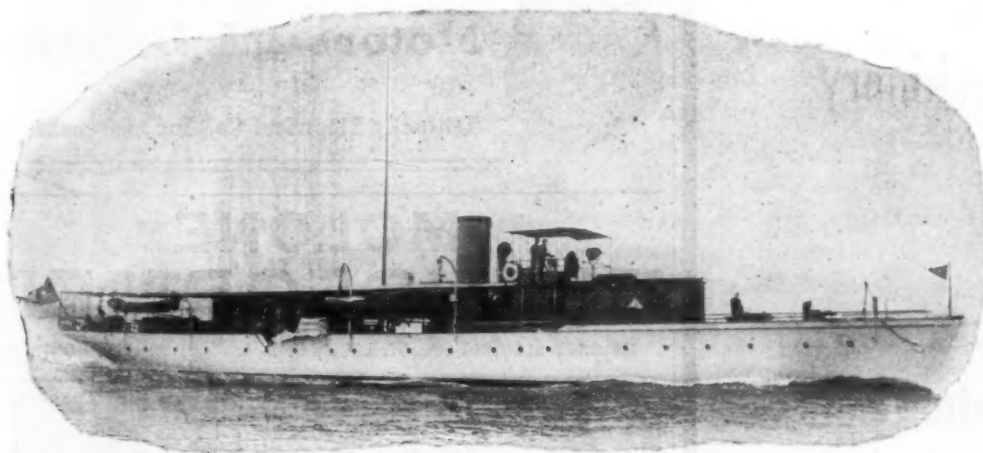
In specifications covering the installation of Edison Storage Batteries on board ship or on land, no mention need be made of lead-lined rooms or separate buildings. An open door is all the ventilation required. No more oil—the contents of both of which preserve steel.

Respectfully,

MILLER REESE HUTCHISON,

Chief Engineer and Personal Representative of Thomas A. Edison.

To be continued next week.



electrolyte, these minute bubbles each convey a small quantity of whatever chemical the solution is composed of; if they are formed in a lead-sulphuric acid type battery, sulphuric acid is the cargo; if in an Edison type Battery, potash.

When these bubbles rise from the surface of the electrolyte and come in contact with an object, they either remain until evaporation disintegrates

## Edison Storage Battery Company

151 Lakeside Avenue,

ORANGE, N. J.

Dictated to the Edison Dictating Machine

## Westinghouse Synchronous Motors

form the most satisfactory  
and economical drive for

### Compressors

Let us tell you why direct-connected Westinghouse self-starting synchronous motors form the ideal drive for compressors. Let us prove to you that the following statements are true.

These motors cost least to install.  
They save floor space. Their efficiency is the highest.  
Maintenance expense is minimum.  
Transmission losses are eliminated.

First cost of these motors is about the same, and in large sizes less than other types of motors.

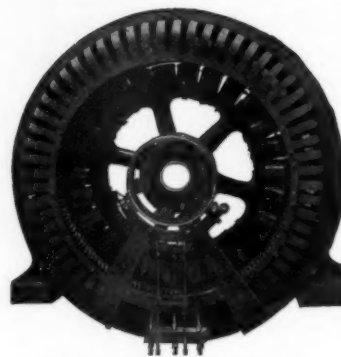
*They will actually reduce your power expense whether you make or purchase your power.*

*Write at once to Dept. 45 for complete information on Westinghouse Synchronous Motors and their advantages for use with compressors.*

**Westinghouse Electric & Manufacturing Co.**

Sales Offices in 45 American Cities

Westinghouse Synchronous Motor



## Crocker-Wheeler Company

Manufactures all kinds of

### Electrical Machinery

**Motors**

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They range in size from 1-100 to 5000 H. P., and are manufactured by a Company that has made good continuously since 1888.

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## Incandescent Lamps

Unexcelled for Life, Brilliancy or  
Uniformity

### Motors and Dynamos

WRITE FOR PRICES

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## MOLONEY TRANSFORMERS

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WINDSOR, ONT., CANADA.

# FANS

BELT DRIVEN, WATER DRIVEN  
and Electric (d. c.) Fans for  
Desk, Wall and Ceiling

GET READY FOR FAN TIME NOW.

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MANUFACTURED BY

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Dayton, Ohio



## Reliable, Economical Lighting

for Small Factories, Private Residences, Steamboats, Etc.

Small Direct Connected

### GENERATING SETS

Probably the most reasonable priced and reliable unit on the market. Substantially built, compact and efficient. All sizes from 4 to 25 K.W., inclusive. Write for bulletin.

**THE TRIUMPH ELECTRIC CO.**  
CINCINNATI, OHIO





## Use Electric Light in Your Mill, Factory or Home

If you are not near a Central Station you can now install your own electric lighting plant at small expense. It requires little space and with the use of a storage battery gives you a full twenty-four-hour service by only an occasional running of an engine.

### The "Chloride Accumulator"

used with the electric lighting plants of this company is the same type of battery used by the large Central Stations, Electric Railways, Telephone and Telegraph Companies, etc.

You will find complete information in "HAND BOOK H. L." Write the nearest office for a copy.

## THE ELECTRIC STORAGE BATTERY CO.

1888

PHILADELPHIA, PA.

1912

ATLANTA SALES OFFICE, CANDLER BUILDING

New York Boston Chicago St. Louis Cleveland Toronto Denver Detroit Los Angeles Seattle San Francisco Portland, Ore.

## Electricity in the Box Shop Pays

Swing Saw Changed From  
Belt to G-E Motor Drive

Carefully consider these advantages of individual motor drive which have been realized in box shops:—

Machines located without reference to power, allowing direct routing of material, more production from a given space and more room in which to handle trucks.

More machines in a given space than with belt and lineshaft drive.

Planer and sticker cutters driven at highest productive cutting speed. Feeds driven by variable speed motors, the speed varying with the class of work.

Each machine always running at full productive capacity, without regard to adjacent machines, reducing pro rata labor cost to lowest figure.

Absence of overhead belting, countershafts and hangers which leaves entire headroom clear and unobstructed (easy to light, to clean and keep clean, easy to ventilate and free from dust) and affords ample facility for locating dust collector or automatic sprinkler systems.

Separate departments may be isolated for fire protection, and a recording meter will show exact power cost for each.

## General Electric Company Motors

assure the above advantages by their absolute dependability of operation under ordinary loads and reasonable overloads.

You will be interested in our bulletin No. 4785 to be had for the asking.

## General Electric Company

Largest Electrical Manufacturer in the World

Principal Office: Schenectady, N. Y.

Sales Offices in the Following Cities:

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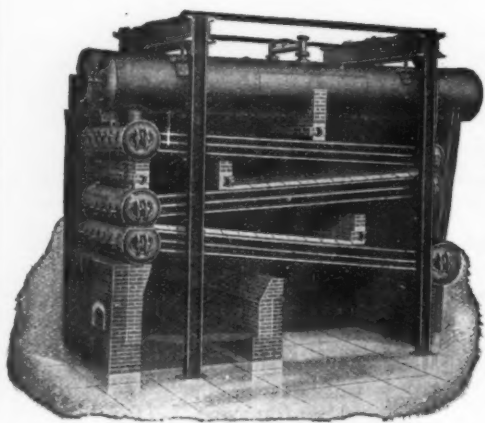
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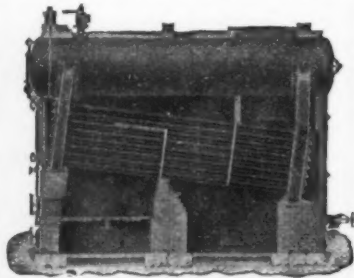
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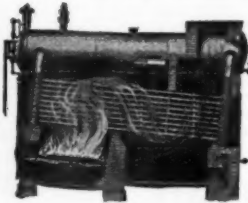
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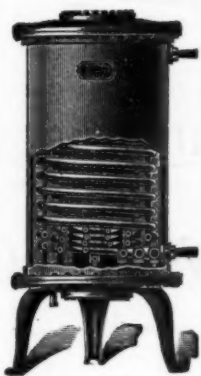
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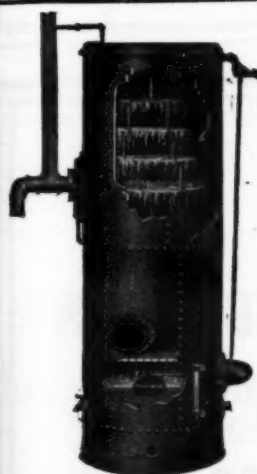
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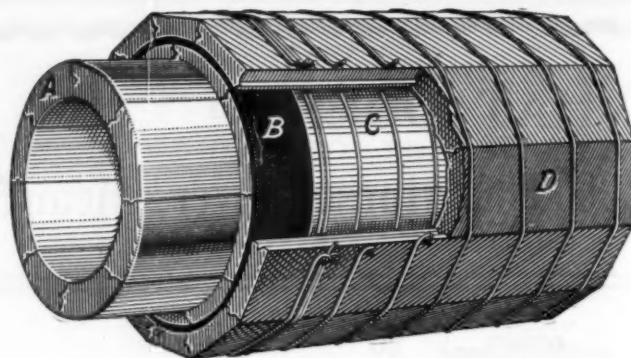
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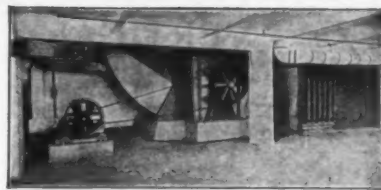
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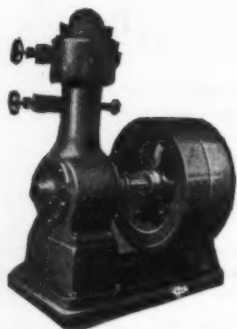
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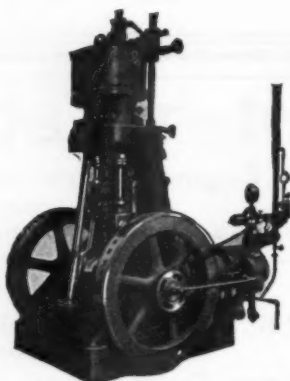
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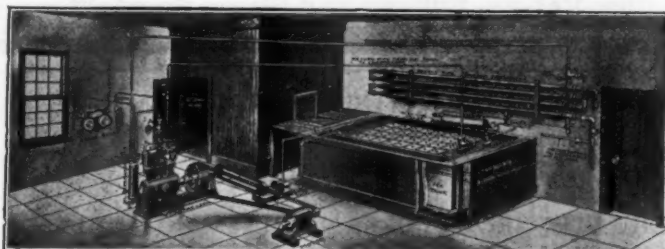
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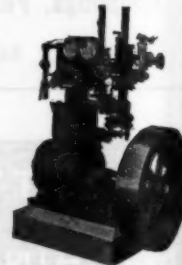
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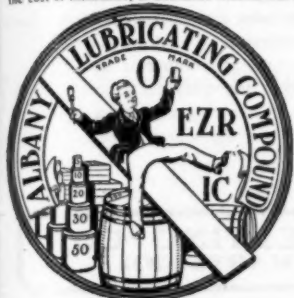


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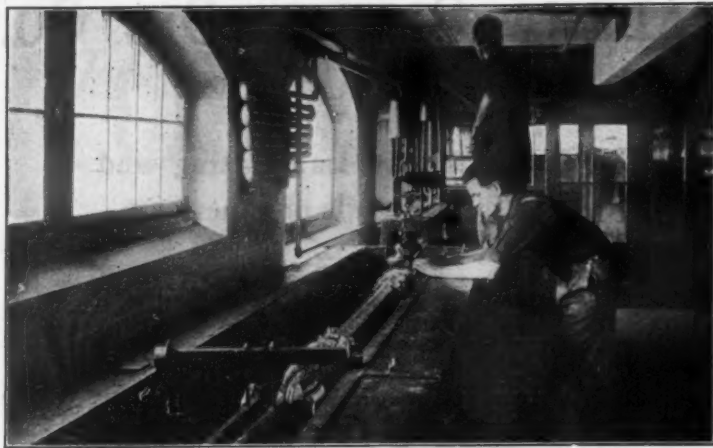
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There are other kinds of belts, and good ones, too, but there are sound, appealing reasons why the Chesapeake Stitched Canvas Belt should be preferred. In comparative tests it has proved cheaper, and also superior in driving power. We want to discuss the question with those interested, and are confident of showing that it's a decided advantage for a plant to use the Chesapeake.

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Now has one edge of every roll

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- 1st. The green edge.
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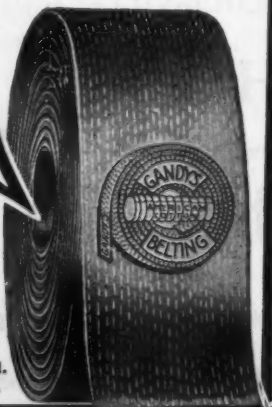
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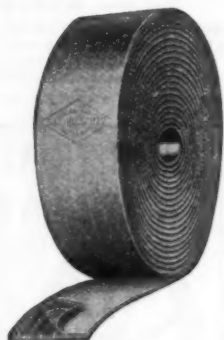
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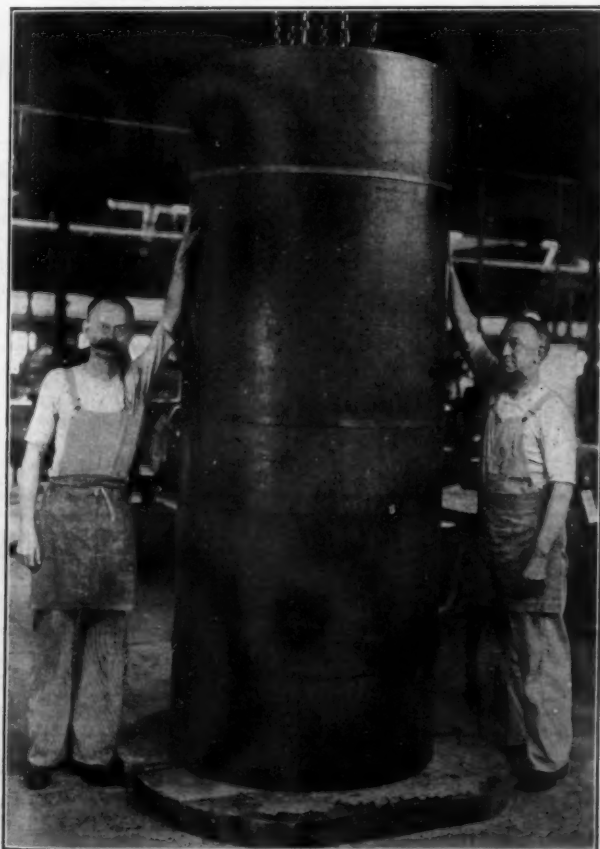
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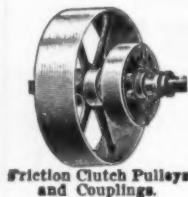
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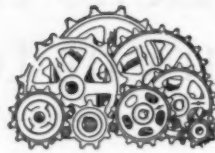
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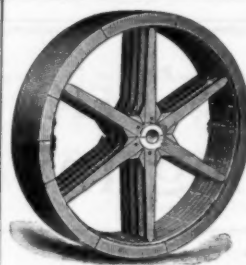
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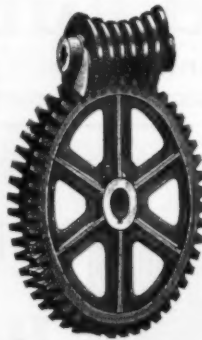


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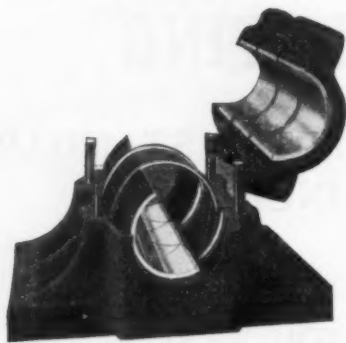


Consumes Less Power and Gives Better Results Than the Old Style Gearing

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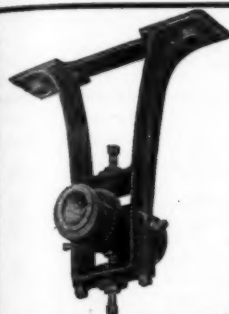


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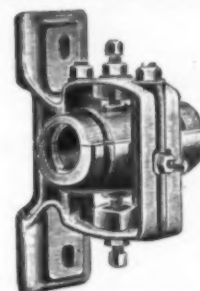
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14" to 24" swing  
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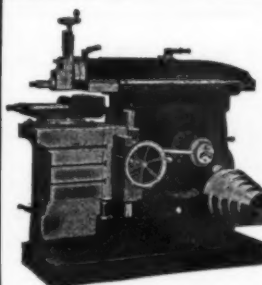
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## Combined Multiple Punch and Shear

Three Tools In One

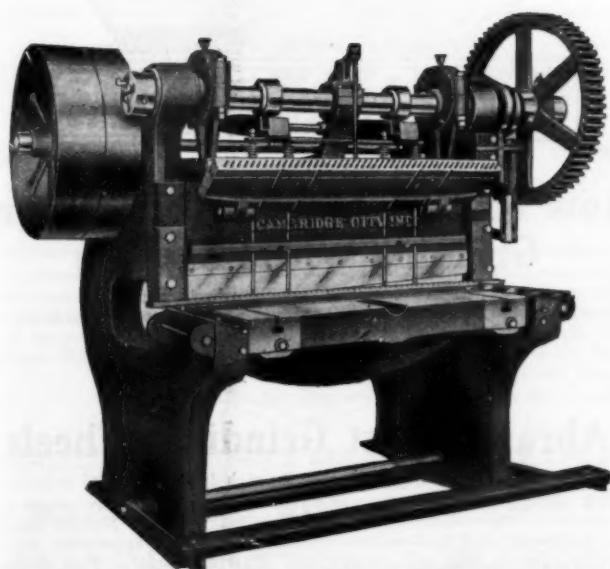


Fig. 1 shows the punch-cross-head disengaged, thus converting the machine into a regular shear for shearing only.

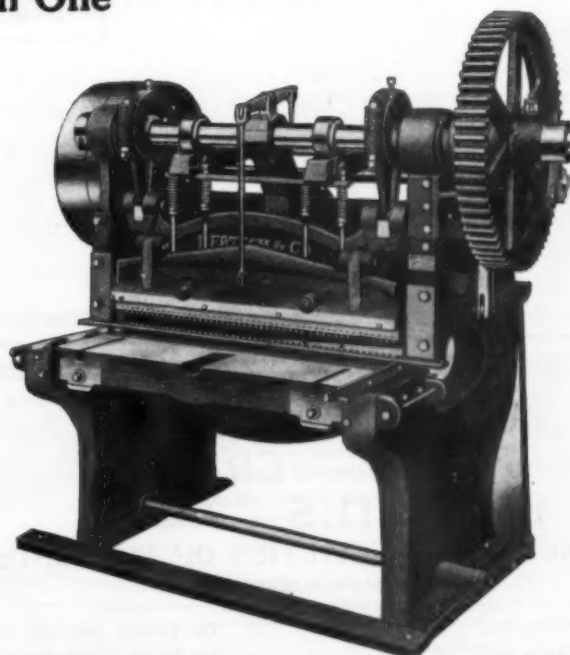


Fig. 2 shows the punch-cross-head locked in position for punching and shearing in one operation.

These cuts show our Patented Combined Multiple Punch and Squaring Shear, which will shear and punch a sheet in one operation, punch only, or shear only when the punch-cross-head is disengaged, thus combining three tools in one. It therefore saves floor space, time, power and labor. WRITE FOR CATALOG "E"

BERTSCH & COMPANY, Cambridge City, Ind.

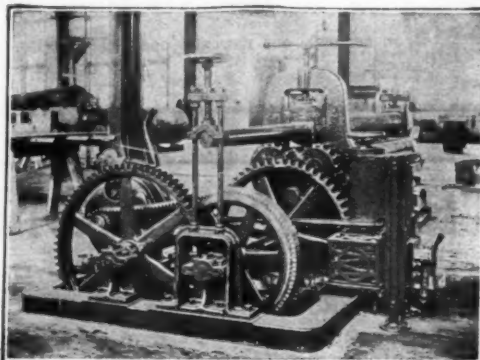


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## The Morse Silent Chain

is the only chain with a joint almost wholly free from friction. It has the exclusive two-pin "rocker joint" (see exposed links on corners of chain border design).

The Morse Silent Chain gives a higher percentage of efficiency in transmitting power than any other chain, belts, ropes or gears—fully 99% maintained throughout its entire life.



15 H. P. Morse Silent Chain driving Bending Rolls. Speed—1210 feet per minute on 35-inch centers.

The Morse Silent Chain is now, and has been for some years, used extensively in steel mills, tube mills, railroad shops, foundries, etc., on very severe service under all kinds of conditions, and has always given perfect satisfaction. Write for Bulletin 11.

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### USE CAPITAL



Will harden in water or oil. Carries a keen edge and outlasts standard high speed steels 4 to 8 times. Can be run 25 to 50% faster. Adapted to fine finish as well as heavy roughing. Always satisfactory.

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Many users today still select their grinding wheels on the erroneous theory that one kind is as good as another, which in nine cases out of ten is not correct. Each grinding operation presents its own peculiar difficulties, so that a wheel which meets the requirements of one class of work perfectly, might be entirely unsuitable for any other purpose.

That's just the reason for the economy of

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There's a special abrasive wheel made for each different kind of grinding.

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Do this now.

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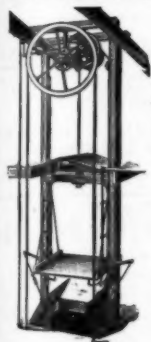
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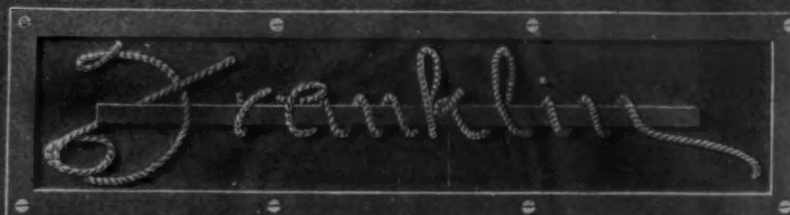
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# ANOTHER STEP

The development of the Reinforced-Concrete Dam has demonstrated that there was room for good thinking along the line of Hydraulics. There is still room.

The Hollow Core Wall for earth embankments or hydraulic fills, which is the subject of this advertisement, is so obvious at a glance that but little discussion is necessary.

Figure 1 shows the approximate line of saturation of the ordinary earth dam, the section being that of the famous Necaxa dam in Mexico, which sloughed out during construction. The control of the "line of saturation" has been the perplexity of engineers since earth dams were built.

It is well understood that the saturated underbody of an earth dam becomes a lubricated plane on which the whole structure is liable to slip. In other words, the ordinary earth dam is upside down as regards stability.

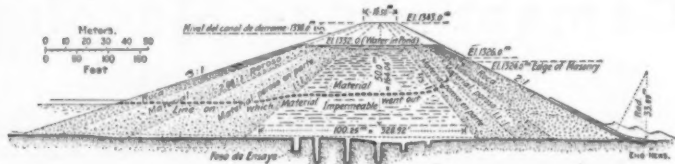


FIGURE 1.—LINE OF SATURATION AND SLIP, NEXACA DAM.

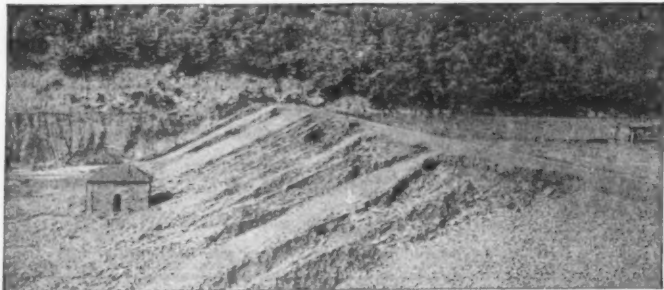


FIGURE 3.—EARTH DAM AT ALTOONA, PA., SHOWING EFFECT OF WASH.

Puddle walls of clay, concrete core walls, etc., have been and still are used and serve a certain purpose. But a clay wall is not impervious to boring animals or immune against shrinkage, and a concrete core wall, if massive, is very costly, and if light is liable to destructive distortion.

Furthermore, the material in the dam loses effective weight in proportion to its buoyancy. The degree varies with the nature of the material, but some loss always exists. Thus, if the material were supposed to be open gravel weighing when dry, say 120 lbs. per cubic foot, when submerged it would weigh only 84 lbs. per cubic foot, owing to the displacement of the water and allowing 40 per cent. of voids; and similarly with other material. The down stream prism of the dam being protected by the hollow core wall is *always* dry, and therefore always up to full efficiency and weight.

One of the salient features of the Ambursen Dam, which received instant recognition at the hands of engineers and laymen alike, was the facility afforded for absolute inspection of every square foot of its *interior*. We have now done the same thing for the earth dam and at no sensible increase of cost.

The Hollow Core Wall is built of reinforced-concrete, using a system of slip forms which admit of rapid and economical construction. It consists of two comparatively thin parallel walls spaced by ribs, which are monolithic with the whole structure and capable of withstanding the external earth pressure. The up-stream wall is keyed into the impervious sub-structure, whether of rock, clay, hardpan, etc., effectually intercepting the "creep" of water along the junction plane. In the illustrative section the sub-structure is shown as rock, although the occasions are comparatively rare when the immediate foundation of an earth dam is of this material.

The down stream wall need not be keyed in at all, or at most but slightly. If deep lying water-bearing seams are suspected they may be reached and tapped off by a series of drill holes along the bottom of the core wall.

Drain pipes with open joints and of large capacity are led from the core wall at frequent intervals out through the embankment, discharging into gutters on the down stream side. The joints are cemented as they approach

the toe of the embankment in order that they may not be clogged by penetrating roots.

It is obvious that any water which may find its way through the sub-material or which may come through any joints in the core wall, or from any source whatever, is absolutely intercepted by the hollow wall and drained away. *For the first time, therefore, we have secured an absolutely dry earth prism for the down stream section of the dam, thus materially increasing its stability.*

Moreover, the Hollow Core Wall penetrates the heart of the whole mass. It is well lit from above and is accessible by a permanent ladder-way of iron rungs extending to the bottom. Openings through the parti-walls at various levels give access to every foot of both surfaces. Any unsuspected leak may therefore be located, and, if possible, remedied. If it is not serious enough to be troublesome, or if it is incapable of being remedied, we at least make certain that it is powerless for harm.

The Hollow Core wall is arranged to be covered by plank tompions in the winter, so that the space is not filled with snow and ice.

Figure 3 is a photograph of the little earth dam in the famous Horseshoe Bend on the Pennsylvania road near Altoona. This dam is so located that it is subject to violent wind gusts down a gorge of the mountains. A few years ago such a gust pushed the water to the lower end of the dam and actually blew it over the edge of the dam. The result was the beginning of a severe wash as shown in the illustration.

Now in many locations, notably in Colorado and the States on the eastern slope of the Rocky Mountains, the slope of the land is such that the dams are in the southeast ends of the valleys. The prevailing heavy winds are from the northwest, and hence a wave run is set up which expends its full force on the dam and is a serious menace.

To meet this we carry the down-stream wall up somewhat above the level of the embankment and thus effectually intercept any wash that may occur from this cause or from the accidental over-spill of the dam due to extraordinary floods or carelessness in handling the waste gates. Such a device as this would have saved the dam that caused the Johnstown disaster and many others which have gone out under similar conditions.

It must not be hastily inferred that the Hollow Core Wall increases the cost of the dam. The chances are that it actually decreases it. This is too broad a subject to discuss in an advertisement, but it will be fully amplified in our circular on EARTH DAMS, which we will send on application.

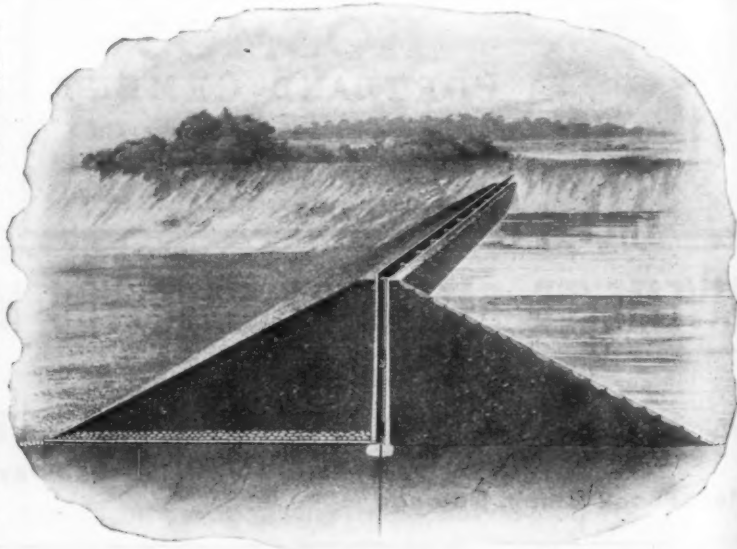


FIGURE 2.—EARTH DAM WITH HOLLOW CORE WALL AND DRAINS.

There is a modification of the Hollow Core Wall which relates particularly to Hydraulic Fill Dams, and will be made the subject of our next advertisement.

Respectfully submitted,

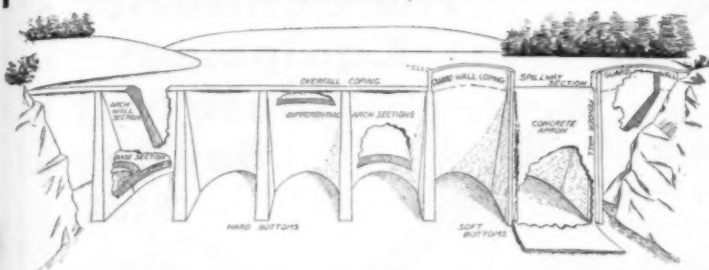
**Ambursen Hydraulic Construction Company**  
Engineer--Constructors

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No reinforcing material to rust out is required.

Indestructible concrete construction is utilized throughout.

The overturning effort is entirely diverted to a downward pressure on base of dam.

The form of the dam permits stress without cracking, due to great changes of temperature.

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Costs are low and will be given on request.

We know that we have a design that has a factor of safety of 16 and will fill any condition that can be imposed on a dam.

Several large dams of this type have been completed and more are in preparation.

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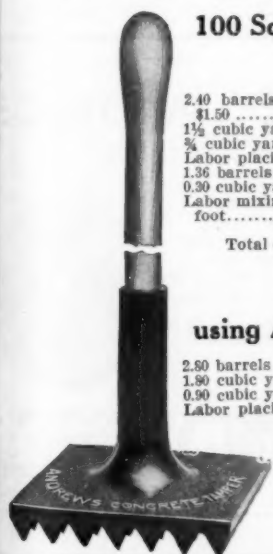
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**MULTIPLE ARCH HYDRAULIC CONSTRUCTION CO. Ltd.**  
ENGINEERS AND CONSTRUCTORS

SPARTANBURG, S. C.

## Examine These Figures

An actual comparison of the cost of laying a six-inch concrete floor with granolithic surface with the Andrews Concrete Tamper, and the old method of laying the top surfaces separately.



### 100 Square Feet with Separate Finish requires

2.40 barrels cement in 5" base (1 3/4 concrete) at \$1.50.....	\$3.60
1 1/2 cubic yards stone in 5" base at \$1.75.....	2.625
3/4 cubic yard sand in 5" base at \$1.20.....	.90
Labor placing 1 5/8 cubic yards concrete at \$1.50.....	2.33
1.35 barrels cement in 1" top (1 1/2) at \$1.50.....	2.04
0.30 cubic yard sand and pea stone at \$1.75.....	.525
Labor mixing, placing and trowelling at \$0.02 square foot.....	2.00

Total cost per 100 square feet.....\$14.02

### 100 Square Feet using Andrews Corrugated Tamper

2.50 barrels cement 6" (1 1/2 concrete) at \$1.50.....	\$4.20
1.90 cubic yards stone at \$1.75.....	3.35
0.90 cubic yard sand at \$1.20.....	1.08
Labor placing 1 23/27 cubic yards concrete at \$1.50.....	2.78
1/2 barrel cement for sprinkling top at \$1.50.....	.19
1/4 cubic foot sand for sprinkling top at \$1.20.....	.01
Labor trowelling and tamping at \$0.0125 square foot.....	1.25

Total cost per 100 square feet.....\$12.66

Saving by use of Andrews Tamper.... \$1.36

That shows clearly the direct saving of finishing floor at the time base is laid by using Andrew's Tamper, without running two mixing gangs. Yet the price of Andrews Tamper is only \$2 each. Discount in lots of 1/2 doz. or more. Sent on approval. Money returned if you are not satisfied.

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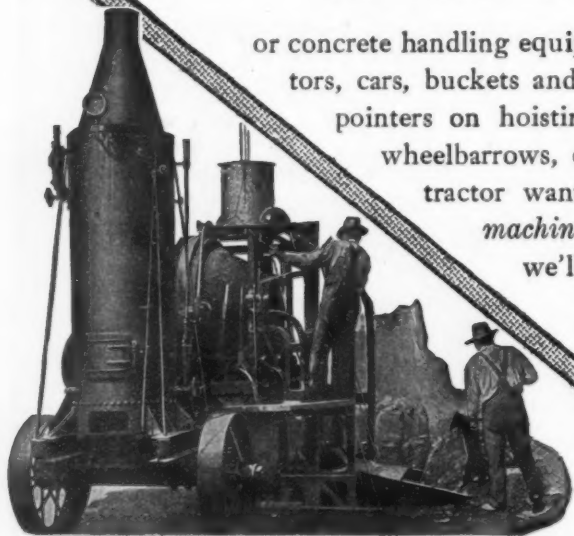


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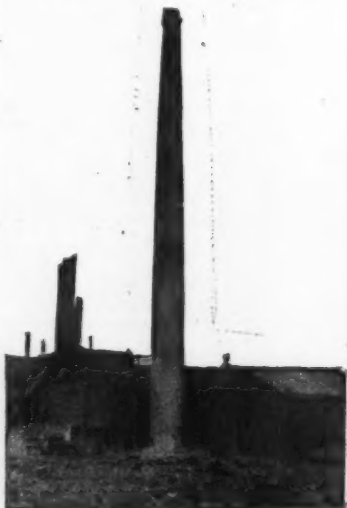
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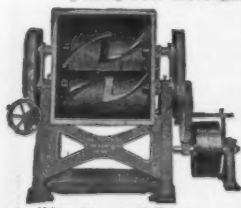
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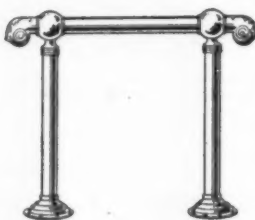
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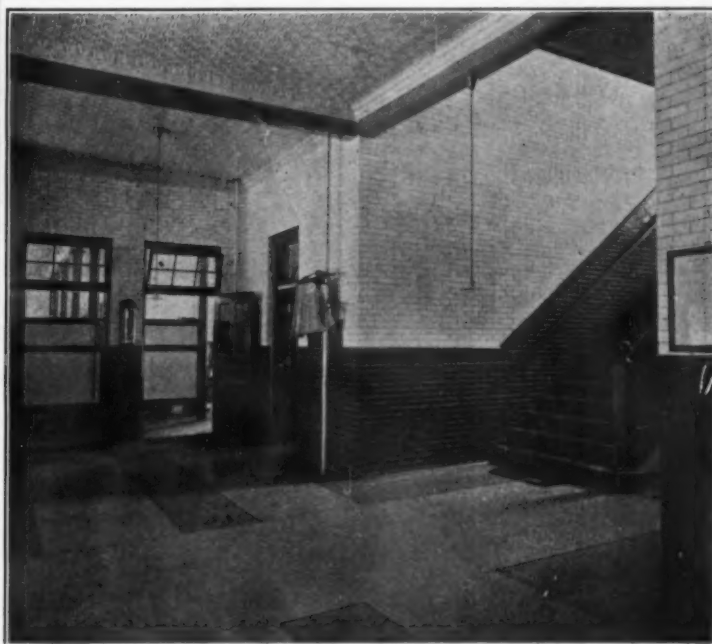
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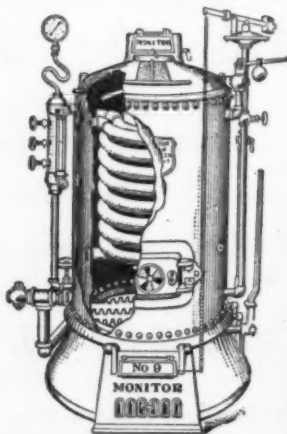
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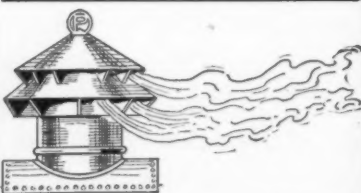
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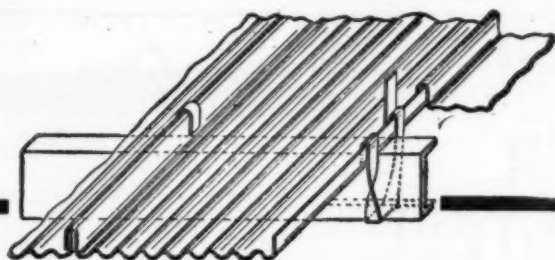
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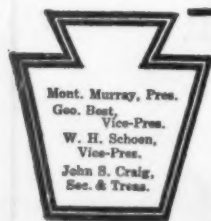
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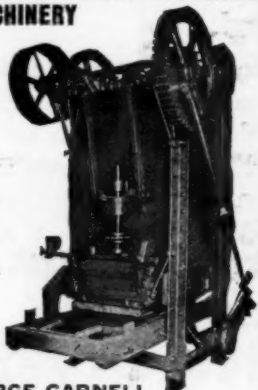
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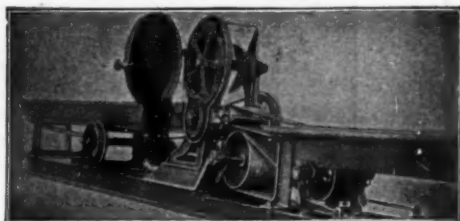
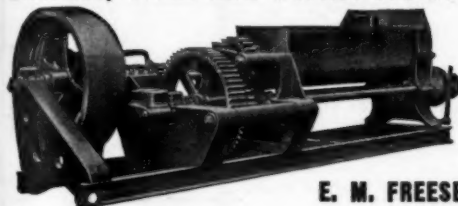
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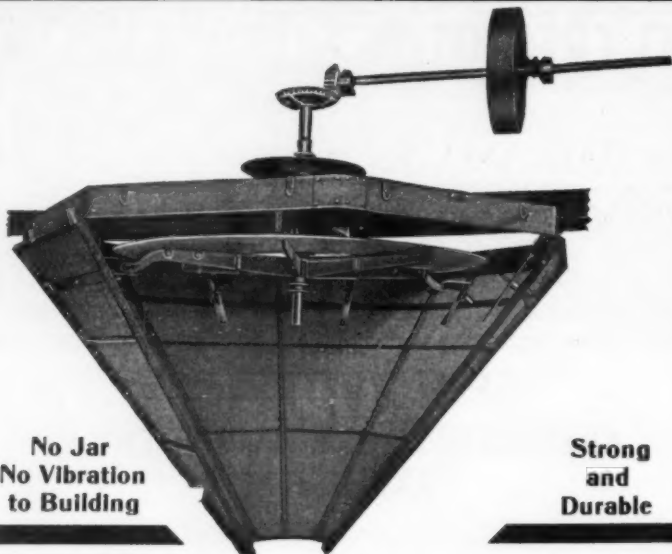
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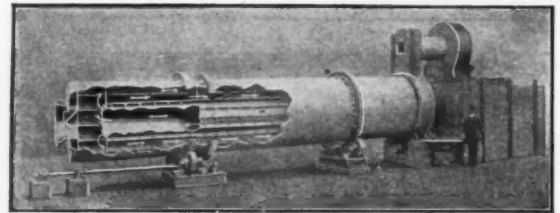
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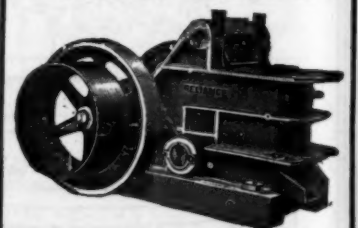
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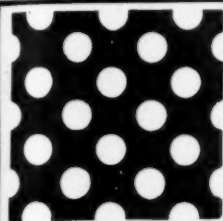
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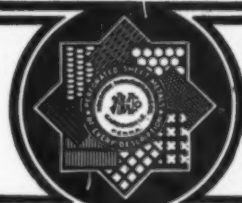
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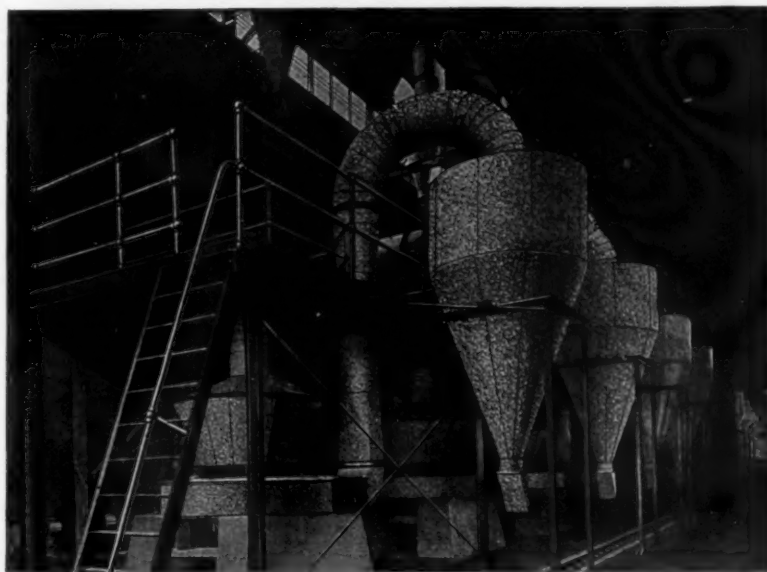
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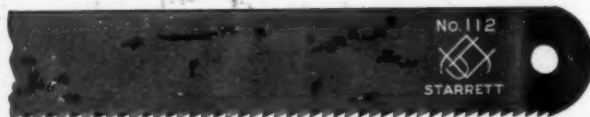
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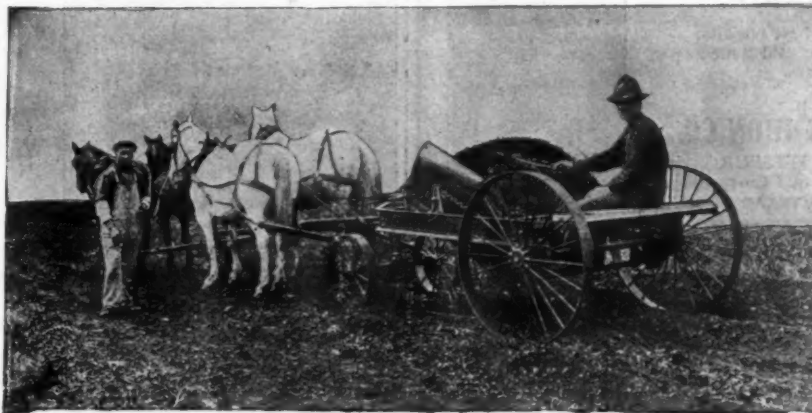
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Eight men can shovel one cubic yard of loose sandy loam into a dump wagon in 3 minutes, therefore in a 10-hour day these 8 men can load 200 cubic yards of material. At \$1.50 per day 8 men cost \$12.00, therefore the **labor cost alone** on 200 yards would be 6c. per cubic yard.

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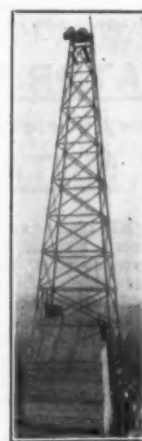
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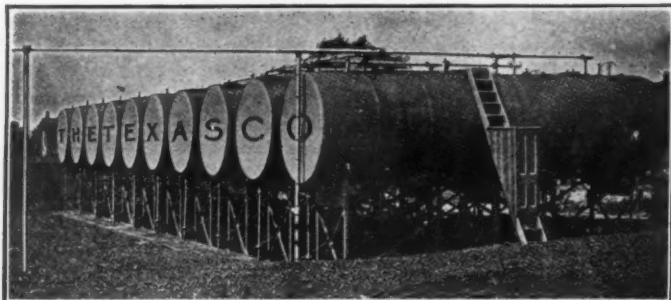
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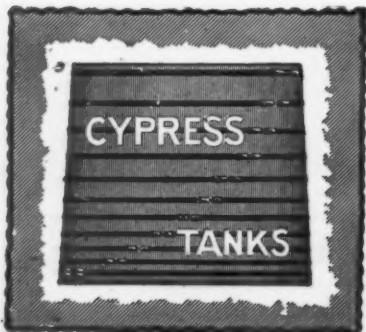
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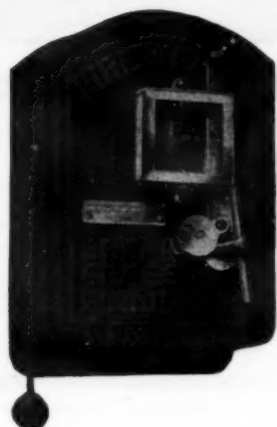
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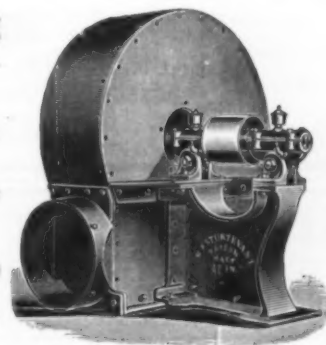
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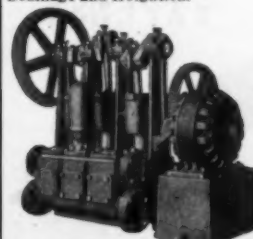
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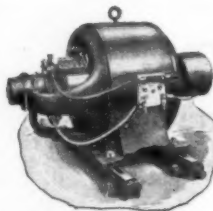
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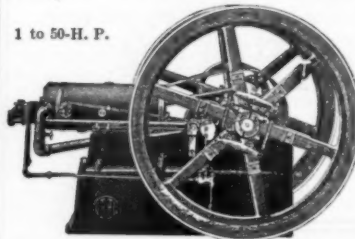
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# MANUFACTURERS RECORD

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BALTIMORE, APRIL 18, 1912.

## MEN, THEY, TO THE DEATH.

No love than theirs is greater; to  
save the weak they, strong, faced  
Death.

To the unwise, their going was  
misery and their departure, utter  
destruction.

But in peace they sleep; His right  
hand covers them and His arm protects  
—into Eternity.

April 15, 1912.

## MISSISSIPPI RIVER CONTROL THE PROVINCE OF THE FEDERAL GOVERN- MENT.

B. R. Hoshall, vice-president and gen-  
eral manager of the Allen Engineering  
Co. of Memphis, writing to the MANU-  
FACTURERS RECORD regarding the flood  
conditions in the Mississippi Valley, says:

It occurs to us that if the United States  
Government will take the entire proposition  
in hand, not only to co-operate with the  
levee boards, but to take steps toward  
straightening the river by cutting canals  
across the immense bends, thereby enabling  
the water to run out more readily, it will  
make the levee system more efficient.

It is estimated that quite \$50,000,000  
has been spent by the Federal Govern-  
ment and Mississippi Valley States and  
communities in the past thirty years  
upon the improvement of the Missis-  
sippi River, quite three-fifths of that  
sum having been spent upon levee work,  
and that an expenditure of another \$18-  
000,000 will give the Valley a perfected  
levee system. In 1903 the Mississippi  
River flood wrought damage amount-  
ing to \$5,000,000, and it is thought that  
this year's flood will mean at least  
\$10,000,000 more of damage. Floods  
more or less serious occur every year,  
but the floods of these two years men-

tioned have cost within \$3,000,000 of  
the amount of money required to pro-  
tect 20,000,000 acres of productive allu-  
vial land from damage for all time.

The loss incurred through floods af-  
fects so many States—they are due to  
waters originating in so many other  
States—and the task of coping with  
them is so far beyond the power of  
single States or groups of States co-  
operating, that the opinion expressed  
by Mr. Hoshall that the Federal Gov-  
ernment should take the proposition in  
hand is becoming more and more forc-  
ible with every flood. It is by no means  
a novel proposition. Nearly sixty-seven  
years ago, in July, 1845, six hundred  
delegates from Pennsylvania, Virginia,  
North Carolina, South Carolina, Missis-  
sippi, Louisiana, Texas, Arkansas, Ten-  
nessee, Iowa, Kentucky, Missouri, In-  
diana, Illinois, Alabama and Ohio, in a  
convention at Memphis, emphasized the  
National character of the Mississippi  
River problem in the following reso-  
lutions:

That safe communication between the Gulf  
of Mexico and the interior, afforded by the  
navigation of the Mississippi and Ohio  
rivers and their principal tributaries, is in-  
dispensable to the defense of the country in  
time of war, and essential also to its com-  
merce.

That the improvement and preservation of  
the navigation of those great rivers are  
objects as strictly national as any other  
preparation for the defense of the country,  
and that such improvements are deemed by  
this convention impracticable by the States  
or individual enterprise, and call for the  
appropriation of money for the same by the  
general Government.

That the deepening of the mouth of the  
Mississippi so as to pass ships of the largest  
class, cost what it may, is a work worthy  
of the nation and would greatly promote the  
general prosperity.

That the project of connecting the Missis-  
sippi River with the lakes of the north by  
a ship canal, and thus with the Atlantic  
Ocean, is a measure worthy of the enlight-  
ened consideration of Congress.

That millions of acres of the public do-  
main lying on the Mississippi River and its  
tributaries, now worthless for purposes of  
cultivation, might be reclaimed by throwing  
up embankments, so as to prevent overflow,  
and that this convention recommends such  
measures as may be deemed expedient to ac-  
complish that object by a grant of said  
lands or an appropriation of money.

That early convention reflected the  
broad, patriotic vision of John C. Cal-  
houn, who presided over the body, and  
who took the ground that the Missis-  
sippi River was a great inland sea  
which, without question, the Govern-  
ment was as much obligated to protect,  
defend and improve in every particular  
as it was to conduct such operations  
on the seaboard. Calhoun contended  
that what individual enterprise could  
effect alone was to be left to individual  
enterprise; what a State and individ-  
uals could achieve together was to be  
left to their joint action, but what  
neither of these separately and con-  
jointly could accomplish was the prov-  
ince of the Federal Government, and  
this he thought was the case in refer-  
ence to the Mississippi River.

The Federal Government, State and  
municipal authorities and individuals

have of their own initiative or in co-  
operation made a manful fight in the  
past two weeks against conditions men-  
acing human life and property in which  
the people of the whole country have  
direct or indirect personal interest.  
These conditions emphasize the wisdom  
of the resolutions of nearly seventy  
years ago, when the greater portion  
of the Mississippi Valley was a wilder-  
ness, and the emphasis is the more  
urgent because the transformation of  
that wilderness into the heart of pro-  
duction in America for the benefit of  
the people of the United States has  
been largely responsible for the flood  
conditions of today. The present Con-  
gress has the opportunity to be of prac-  
tical benefit to the country and to play  
the most beneficial kind of politics by  
making provision for the completion of  
the improvement of the Mississippi as  
a highway for commerce and, as part  
of that improvement, for the protection  
of 30,000 square miles of fertile lands  
against the Mississippi floods.

### FOR DIVERSIFICATION.

Mr. W. W. Watson, cashier of the  
Merchants & Planters' Bank of Bishop-  
ville, S. C., and proprietor of the Caro-  
lina Farms at Orangeburg, writes to  
the MANUFACTURERS RECORD:

The amount of money which annually goes  
out of the little State of South Carolina for  
bacon, corn, hay, mules, horses and guanos  
would very nearly half feed our population.  
Let's get together, then, and induce the  
farmer, the producing class, to plant less  
cotton, the most expensively cultivated crop  
in the world, considering the net profits to  
be derived from it. There are more poor  
cotton raisers today than any other class  
of agriculturists in the world, and most of  
the cotton farmers are just living from hand to  
mouth. They manage to pay out, most of  
them, and that's all.

Mr. Watson's letter is in connection  
with an interesting article by him on  
Bermuda grass recently published in  
the Columbia State. For some years  
he has been active in directing the at-  
tention of Southern farmers, dairy-  
men and stock-raisers to Bermuda  
grass for pasture, lawn and hay, and  
his article deals with its many quali-  
ties and adaptability. The moral in  
his article is that less cotton be planted  
and that more good and poor land be  
planted in Bermuda grass for cows and  
colts, sheep and hogs and poultry.  
Diversified farming has been preached  
for many years in the South, and there  
has been in the last ten or fifteen years  
a return in a marked degree to condi-  
tions that prevailed in many sections of  
the South before the war, where the  
farmers, in addition to large money  
crop, raised most of their home sup-  
plies. This was especially true in the  
case of many of the large plantations.  
Necessities of thirty or forty years  
ago not only compelled Southern agri-  
culturists to devote practically all their  
attention to cotton, but also led to a  
break-up of many of the larger planta-  
tions into small farms. At the same  
time, the dominance of the one money  
crop idea extended from cotton-growing

to the growing of early fruits and vege-  
tables. Consequently, while there has  
been a great expansion in the variety  
of crops raised by the South for market,  
diversification of individual farms is  
not yet what it should be and what the  
South can make it. Such work as that  
of Mr. Watson, however, is in the right  
direction, and if his advice be followed  
Southern farmers will have less and  
less expenditure for necessities every  
year, and their independence as to home  
supplies will give them the whiphand  
in the markets for their big money crop.

### AS TO IMMIGRATION.

Eugene Creed of Frederick, Md.,  
writing to the MANUFACTURERS RECORD,  
shows misconception of the MANU-  
FACTURERS RECORD in two particulars. He  
says:

Your editorial on immigration in the issue  
of the 4th inst. is most timely. You warn  
the State against an influx of undesirables.  
Are you not in danger of incurring the en-  
mity of your advertisers, particularly those  
who import these unfortunates to our shores  
for no other purpose than that of exploiting  
them at a wage hardly possible for their  
existence and one wholly impossible for a  
native to consider?

The manufacturer is not wholly to blame,  
either. Could the clothing trade of Balti-  
more compete with the sweatshop work of  
Rochester and Chicago if it did not employ  
the same class of labor at the same or at a  
lower wage? The answer is "No."

And, on second thought, are these immi-  
grants a menace to the State? Without the  
oyster, clothing, webbing and other indus-  
tries of the city of Baltimore, would the  
metropolis be what it is today, and could  
these industries be carried on without these  
new arrivals? A hurried observer might  
say, "Why not use the native labor?"

Let a friend of mine, a canner, of an in-  
land town, who had always employed local  
American labor, tell his tale: "I get the  
Polack labor agent every year to bring over  
forty of his people. They are more reliable  
and work harder than the local help around  
here. I can get more out of a Polack in a  
day than I can get out of two natives." That  
is the reason of the increase in immi-  
gration. You mention the festers of New  
York city and Lawrence, Mass. Let us con-  
sider the foreign-born workers in the latter  
city. They were brought to America under  
false pretences. These newly-arrived unfor-  
tunates found themselves without money or  
friends in a strange land. They were forced  
to take whatever was offered them. Man  
will stand injustice just so long. The fore-  
igners of Lawrence rebelled, and, ignorant  
though they were and are, they compelled  
the American Woolen Co. to advance their  
scale of wages—something the Northern  
Europeans found it impossible to do. Per-  
haps that is the most menacing feature of  
Southern European immigration—their de-  
mand for a decent wage.

As to the first comment, "Are you  
not in danger of incurring the enmity  
of your advertisers?" It is enough to  
say that no thought of advertisers,  
either as to incurring their enmity or  
pleasing them, was in the mind of the  
MANUFACTURERS RECORD in its warning  
against flooding of this country with  
the off-scourings of Southern and East-  
ern Europe. We were viewing the  
menace to the whole country in this  
invasion of latter-day Goths and  
Vandals, and we were absolutely, re-  
gardless of the effect of the publica-



tion of such warning upon our own business.

As to the second suggested criticism, we did not blame these undesirable aliens for coming to this country. As a matter of fact, we believe that the greater number of these undesirable immigrants of the past ten years have hardly been responsible for their movement to his country. Certain foreign governments have been too liberal with their subsidies to trans-Atlantic steamship lines for transporting hundreds of thousands of their populations to this country, and certain alien philanthropic or ecclesiastical organizations have been too active in efforts to induce this country to welcome their proteges for us to have any conviction except that the mass of these undesirables have come to the United States under artificial stimulus.

We do blame the employment of political, ecclesiastical and business agencies in this country in inducing any body of our people to relax for a moment the vigilance as to immigration that is demanded for the maintenance of American institutions and the preservation of the integrity of the American people.

In the editorial criticized we cited figures showing that the immigration of these undesirables was checking in a marked degree the immigration of desirable foreigners. We have since come upon a recent article in *The Survey* of New York dealing with conditions at Lawrence, Mass., which bears out our contention. Speaking of the situation in the Lawrence Mills, *The Survey* says:

Only about one-eighth of the woolen and worsted mill operatives at the present time are native Americans. Slightly more than three-fifths are foreign born, chiefly recent immigrants from Southern and Eastern Europe. The remainder are the native-born children of parents who were born abroad. During the past twenty years the American and the British and Northern European immigrants have been rapidly leaving the mills, owing to the pressure of the competition of the recent immigrant.

What has happened at Lawrence will happen on a wider scale unless the individual States of the country discountenance every effort to combine them for furthering immigration, and unless through their representatives in Congress they bring back the operations of the Federal Government to their proper sphere—the limitation of opportunities for undesirables of any kind to enter this country.

Only last week the New York *Herald* published an article telling of the menace to the country in the present rush of immigration, in the course of which it said:

At Ellis Island, where the immigrants are examined, it is impossible properly to examine the large number of immigrants now, and as a result a gross injury is inflicted upon the health of this country. For the most part the immigrants come from the unhealthy parts of Southern Europe and carry contagious diseases. Many are weak-minded, a condition difficult to detect, especially in children, and they are sent here by their relatives abroad because they can receive better care in American institutions.

That there is cause for alarm from the big influx of immigration now flowing into this country without proper inspection is admitted by everyone familiar with the circumstances. From the plague-ridden districts of Eastern and Southern Europe thousands of immigrants are coming here every week. There is no question that many of them are suffering with diseases characteristic of their country, and not a few are in the early stages of consumption.

The *Herald* quotes Commissioner of Immigration Williams to the effect that he understands that New York pays more than \$8,000,000 annually to care

for the indigent insane, and that of this number at least two-thirds are foreign-born, and commenting upon the situation it says:

We are laying up physical, mental and moral trouble for our people. Who is to blame?

The blame rests primarily upon politicians, big and little, truckling to alien elements among the voters, either by tines of them or through appeals in tongues not understood by the great mass of voters of the country. There are enough of such alien voters massed in New York to turn the result of a Presidential election. Unwitting victims of this sort of baneful politics are many kind-hearted men and women who are induced to give countenance and standing to alleged philanthropic movements for the benefit of the foreign-born, or to aid more or less plausible schemes seeking to commit the Federal Government or the governments of individual States to propaganda designed to check the natural opposition of this country to the flood of undesirables pouring into the United States.

It is about time for the intelligence of the country, whether native or foreign-born, to make itself felt in legislation increasing the restrictions upon immigration and in bringing into the open the alien influences behind the specious schemes.

#### TOO MANY LAWYERS.

President L. E. Johnson of the Norfolk & Western Railway is one of a constantly-increasing number of practical men of affairs of this country who are convinced that one of the great burdens upon the country is a superabundance of individuals called lawyers. In a recent address before the Norfolk Association of Credit Men, President Johnson said:

There are lawyers and lawyers. I believe the time has come when we should elect to our Congress and State Legislatures a different class of men. I have great respect for the profession. But there are lawyers and lawyers. The colleges and universities of this country are yearly turning out young men who realize full well that they could not make a living practicing in our courts. They turn, therefore, to politics and finally to our State Legislatures and the Congress, to make laws to give the lawyers employment. It is up to you to put a stop to that. It is up to you to send to the legislative halls men who have had practical experience in the business affairs of the world. If a man has had a college education and then experience in the practical work of business, so much the better.

This observation of President Johnson bears out the position of President Henry S. Pritchett in his latest report as president of the Carnegie Foundation. In that he gives figures showing that while the total population of the country only doubled between 1870 and 1900, the number of lawyers nearly trebled, increasing from 40,000 to 114,000, or at the rate of 285 per cent. Dr. Pritchett holds that the output of the law schools of the present day is a demoralizing condition, but points to the difficulties in the way of remedying it when he says:

In legislation the members of the legal profession occupy in the United States a unique position. With us, as with no other nation, the door to politics opens through the training of the law. The great majority of both houses of Congress and of most State legislatures are lawyers by profession. This situation imposes upon the members of this profession an unusual responsibility. Not only are the members of the bar directly responsible for the administrative reform of the courts, but they are, in the main, responsible for such legislation as is needed to simplify and improve the conduct of the courts. Moreover, the members of the legislatures, who are to fix the condi-

tions for admission to practice, are drawn in an overwhelming majority from the ranks of lawyers. The Governors of the States, who are to approve or disapprove such legislation, are in many cases members of the same profession. In no country in the world does the responsibility for legislation rest so heavily upon a single profession as in the States of our American Union. Not only do lawyers legislate for the whole country, but they themselves fix the conditions that determine the morals and the efficiency of their own profession. Is the question of standards of legal education brought before the legislature of a State? It is the decision of a group of lawyers that determines the issue. Is the legislature called on to fix the lists of admission to the bar of the State? It is the members of the bar who decide, because the legislature is composed overwhelmingly of members of the bar.

That graduates at the law dominate in so many legislative bodies is the reason not only for the legal profession in this country being upon such a low plane, but also for the greater portion of the sessions of legislative bodies being wasted in debates or speeches of advantage to nobody but a batch of briefless lawyers, or worse than wasted in the perpetration of measures bringing about unceasing litigation.

Typical of the situation was the granting in 1898 of a city charter framed by a commission in which lawyers were in the great majority. The framers of the charter and their loyal following were loud and long in their commendations of its perfections, and this charter was in some quarters regarded almost as an inspired document. But this charter was the nursery of a vast amount of litigation, and within less than ten years was discovered to be so imperfect that another charter was demanded.

That is but typical of 80 per cent. of the law-making of the country today, and it reinforces the demand of President Johnson that law-making be taken from the lawyers and entrusted to men of practical knowledge of business.

#### FINE PROSPECTS IN THE SOUTHWEST.

It is a cheery message which President B. L. Winchell of the Frisco System carries to New York about the crop outlook and general conditions in the Southwest. The Frisco (otherwise the St. Louis & San Francisco Railroad) is a big proposition, although most people in the eastern part of the country know comparatively little about it. Its lines reach north and south from Chicago to Brownsville, Tex., and east and west between Birmingham and Oklahoma City, besides to some points even farther west in Oklahoma. Among the cities it touches en route are St. Louis, New Orleans, Kansas City, Houston, Memphis, Fort Worth, Dallas, and almost every other place of prominence in the different States through which its trains run. Therefore, its president is in a position to be well posted about affairs in that section of country, which he discussed in an interview given in New York. Mr. Winchell says that the flood situation, generally speaking, has not interfered even with the usual spring work of the farmers in the Southwest. This, of course, means that the floods are serious only in the immediate vicinity of the rivers, and not even then are they so bad as have been represented, which was shown by a letter from Memphis in last week's issue of the *MANUFACTURERS RECORD* about the great exaggeration with reference to conditions there.

The crop prospects are reported as most excellent, Mr. Winchell saying that they are now better than at any

other time within the past five years. The subsoil has received and retained a large amount of moisture, and is in splendid condition for a heavy yield. A very large acreage is being devoted to oats, and the spring plowing for corn indicates that here will be a very large planting; the yield will also be heavy, for the condition of the ground is such as to make it appear safe from drought if any should come. He expects the lumber business to improve after the crops are gathered and returns therefrom are received. The outlook for general business is good.

This expression from the Frisco's chief executive is highly encouraging. He has been one of the most active and progressive railroad men of the South and Southwest for a number of years, and is thoroughly fitted to speak with authority concerning the subjects upon which his remarks are based. His company is just now engaged with the Louisville & Nashville Railroad, under a joint control arrangement, in the development of the New Orleans, Mobile & Chicago Railroad, which will give the Frisco a direct route between Chicago and New Orleans, and that will afford both systems enlarged opportunities to participate in the great volume of railroad traffic which is expected to develop upon the opening of the Panama Canal.

This alliance of the Frisco and the Louisville & Nashville may be expected to have an important influence upon the prosperity of the Southwest as well as upon those parts of the Central South which their lines traverse.

#### DOUBLING ITS MAIL TO THE SOUTH.

Mr. M. J. Goble, cashier of the Fifth-Third National Bank of Cincinnati, in a letter to the *MANUFACTURERS RECORD* says:

We take your excellent paper for the use of our bond department, and I desire to say that we find it very interesting and useful in keeping us posted regarding our very close neighbors in the adjoining States to the South of us.

We noticed in our daily papers the other day that Cincinnati's mail to the South in the last year more than doubled, so you see we have reason for a paper like yours, as our business with the banks in Alabama, Florida, Georgia, Mississippi, Tennessee, Kentucky, the Virginias and the Carolinas is increasing steadily.

Here are two facts of interest. One is the value to this bank of the information which it finds in the *MANUFACTURERS RECORD*, and the other is the statement that within the last year Cincinnati's mail to the South has more than doubled. This is a very remarkable illustration of the growth of the business of the South, and especially of the development of Cincinnati's trade relations with the South.

As this bank finds it essential to keep close track of the growth of the South, and especially of new enterprises, in the issuing of new securities through a careful watching of the *MANUFACTURERS RECORD*, so other banks and bankers who may not now be doing this would find it profitable to follow the example of the Fifth-Third National Bank.

#### SELF-DEPENDENCE IN PROGRESS.

Emphasizing its oft-repeated contention that the real growth of a city is from within, and that each community should develop to the full its own resources, the *Times-Herald* of Waco, Tex., taking as its text the recent story



In the MANUFACTURERS RECORD of the growth of Richmond, Va., says:

It causes a thrill of delight to read that Richmond men have had the initiative to devise industries and develop enterprises and the faith to back them with their own money, and in the doing of these things have created many vast business interests and developed great wealth."

That's the way to build up a town; take hold of the things nearest to hand and push them for all they are worth. Don't wait on outside capital, for the outsider is sure to want the plum. Get the plum in your own basket.

Take our big insurance companies; they were organized and are being managed by Waco men. They are money-makers for their stockholders and they are contributors to the growth of the community.

Soil, climate, transportation, water. No city in the Southwest is ahead of Waco on these four essentials in town building. The thing now to keep in mind, brethren beloved of Waco, is the Richmond example as here set forth, to wit: the initiative to devise industries and develop enterprises, and the faith to back them with our own money.

To these comments may be added the suggestion that there is no surer means of attracting outside capital to a community than for the community to manifest its faith in itself by investing its own capital in local enterprises. At many points in the South capital from other parts of the country, from Canada, from England and from other lands is invested to the extent of many millions of dollars in hydro-electric developments, in drainage and irrigation projects, in railroads, in agricultural operations and in other undertakings for the realization of the full potentialities of the South, while quite a good share of the \$3,400,000,000 of capital invested in Southern manufacturing has come from other parts of the country. But, as has been signally demonstrated by Richmond, the real substantial growth of communities rests upon the activity and energy of their own people.

For a while after the beginning of industrial revival in the South the bulk of the available capital was of local origin. It had been slowly accumulated in limited ways, but the confidence of its owners was shown in their promptness to invest its earnings in enlargements of plants. Gradually this confidence set outside capital to investigating and to investing, until now, with the South surpassing in many lines of production the achievements of the whole United States thirty years ago, investments of outside money are being made in constantly-increasing volume. It rests primarily with each Southern community to make possible a repetition for itself, upon the proper scale, the history that is being made in this respect by the whole South.

#### TWENTY-FIVE YEARS' WORK FOR THE SOUTH.

Nearing the age of threescore years and ten, the last twenty-five of which have been given by him to the *Southern Planter*, Mr. John F. Jackson announces in the current issue of that venerable but vigorous monthly his retirement from its editorship. He has earned the relaxation from active work that he will now enjoy. In the past quarter of a century the agricultural South has grown from a near-waste in many sections to the hope of the country as to food supplies and as to materials for clothing, and the value of its agricultural output annually has increased from about \$800,000,000 to \$3,000,000,000. The *Southern Planter*, with its home in Richmond for the greater part of a century, has grown with the growth of the South, to which it has so signally contributed, and the inspiration of the paper has been John F. Jackson.

## Scientific Gardening in Louisiana.

By J. F. MERRY of Manchester, Iowa.

At this particular time, when our statesmen in Washington are again threatened with a slight attack of tariffphobia, and one of the principal industries of Louisiana may be paralyzed by placing sugar on the "free list," it will at least afford a little comfort to the honest, hard-working yeomanry of Louisiana to learn what may be done in the growing of vegetables under scientific methods even on lands that have for many years been considered the poorest within the State. A few months since the MANUFACTURERS RECORD proclaimed that about 70 per cent. of all the rice produced in the United States was grown in Louisiana, and again from the same source we learned that Tangipahoa parish, Louisiana, was the center of the great strawberry industry of the United States, and fabulous stories were told of the vast sums of money that Chicago had sent into this parish during the season of 1911.

The writer having been for years interested in the agricultural development of Louisiana, and especially that portion of it traversed by the Illinois Central and Yazoo & Mississippi Valley railroads, determined that a trip should be made from his Iowa home to Tangipahoa parish during the strawberry season of 1912.

Here we are on the 6th of April at the town of Hammond, La., where the song of the mocking-bird and the cries of the strawberry venders are heard on all sides. Owing to the persistent cold rains and the backwardness of the spring, the berry season has been nearly a month late, but the outlook for an average crop is certainly good. The one thing that now worries the growers is the unfavorable high-water reports from the North. Should these conditions make it impossible for the Illinois Central Railroad Co. to transport promptly this new crop of berries to Chicago and other Northern markets it will necessarily affect the net returns. The hotels of the parish are filled with strawberry drummers representing large fruit and commission houses for nearly all of the important cities of the North. It is estimated that Tangipahoa parish has 22,000 acres of strawberries, a very large percentage of which are in splendid condition. Every train from New Orleans has one or two coachloads of men, women and children, who, for a penny a pint box, help to gather this great crop. On the 3d inst. 1100 crates of 24 pints each were sold at one small station for \$3.35 per crate f. o. b. The day following \$2.50 was the ruling price, and today, being Saturday, only \$2 are bid. If the high water about Cairo does not interfere, several towns within the parish will ship trainloads of berries by the latter part of next week.

Louisiana was for years noted for its production of cotton, sugar and syrup. Then the strawberry industry was introduced, and now the growing of corn for home use and for export is attracting attention of farmers everywhere, but these staple crops are not the only ones in Louisiana worthy of mention. The vegetable industry has become nearly as important and as profitable in the parish of Tangipahoa as that of strawberries. To get at the facts and to furnish the readers of the MANUFACTURERS RECORD with what has been accomplished by one vegetable grower, we yesterday visited Mr. C. A. Tiebout of Roseland, and the following is a true story which will appeal to every truck grower, North or South:

Mr. Tiebout, as bookkeeper for an agri-

cultural implement dealer at Kalamazoo, Mich., suffered nervous prostration in October, 1890. His physician recommended his going to some quiet resort where nothing approximating business would disturb his nerves. He had learned through farm papers and other sources that a colony of Northern people were locating in the pine woods of Tangipahoa parish, Louisiana, and had named the town Roseland. He decided this would be a favorable place for him to recuperate, and his friends purchased for him a ticket to that point. For two weeks after his arrival he was confined to his bed. Then he began to mend, and soon was hale and hearty, and now enjoys telling his friends that in the 22 years he has lived at Roseland he has not paid for himself a doctor's bill of so much as \$1. The climate of Roseland and the people of the colony so pleased Mr. Tiebout that he began to cast about for something he might do to make a living for his family, consisting of a wife, two sons and a daughter. He found about a mile from the station a tract of 17 acres of land, so situated that from its highest point water would flow in every direction, making it possible to irrigate every foot of the land. Mr. Tiebout being a graduate of Blackburn College, Illinois, and especially fond of chemistry, he analyzed the soil at different points on this tract, purchased it and at once began the removal of stumps and the breaking up of the land. His knowledge of chemistry also enabled him to mix his own fertilizers, and his experience soon taught him what kind of fertilizer each product demanded to get best results. His next wise move was to put down a well at the highest point, construct a large dirt tank, which he lined with cement. He installed a gasoline engine and during a dry season when vegetables ruled high he watered his 17-acre garden and produced the best vegetables and the largest quantities per acre of any grower in the South. He had also made the acquaintance of reliable commission men, ascertained what particular products were in demand at remunerative prices, and then began his most successful career as a gardener. He

grows cabbage, cauliflower, radishes, head lettuce, beans, tomatoes, peppers and egg-plant. He now has one-third of an acre of head lettuce, from which he confidently expects to market 1000 bushels. It is put up in hampers of one bushel each, and will sell for about \$1 per hamper. His method is to first plant the seed in a hot bed, then transplant to cold frames and from these to the field. Mr. Tiebout says that two things are essential to prosperous gardening—a diversity of products and a knowledge of how to pack and when and where to market.

When Mr. Tiebout began his garden operations at Roseland his three children were small. From the earnings of this 17 acres of vegetables the eldest son, Ralph, graduated at the Michigan University, Ann Arbor, and is now civil engineer for the Mt. Vernon Bridge Co., Mt. Vernon, O. The second son, George, graduated from the Louisiana State University, and is now State horticulturist at Baton Rouge, La. The daughter, Miss Pearl, is a graduate of the Illinois Woman's College, located at Jacksonville.

A few years since four acres adjoining were added to the original 17-acre purchase, making a most beautiful place of 21 acres, that cost \$385. The gross returns from this place have for the past 14 years averaged over \$8000 per year. Two colored men are employed by the year, but the master mind of Mr. Tiebout does the directing. Last year an artesian well 1200 feet deep with an immense flow took the place of the old well and the gasoline engine. From this deep well water is supplied to every foot of the 21 acres. Mr. and Mrs. Tiebout are also enjoying a new beautiful home with all the modern conveniences. A new packing-house barn has been constructed, into which the clear water has been turned. It is interesting to note how every vegetable goes into the washing vats and is made clean before packing.

Not every gardener can show such results as Mr. Tiebout. No phase of agriculture needs such careful study as the successful growing of vegetables. It is a most important industry, and if, as some contend, the meat products of this country will grow less year by year, then the demand for vegetables will proportionately increase, and no State can excel Louisiana in quality or quantity if the growers will use the Tiebout methods that are phenomenally successful.

## Great Tennessee Railway and Power Plan.

The revised plan of the Tennessee Railway, Light & Power Co. and also of the Tennessee Power Co. has been published, and a map showing the routes of the transmission lines operating and to be operated is published on the following page. The companies have in view extensions north to Cincinnati, Louisville and Evansville and west as far as Memphis and Cairo, connecting with numerous places en route in both directions. The first-named corporation will own the Tennessee Power Co. and a majority of the stock of the Nashville Railway & Light Co., which was recently acquired for the merger. It will also own, it is stated, a majority of the stock in the Chattanooga Railway & Light Co. and the Cleveland (Tenn.) Electric Light Co.

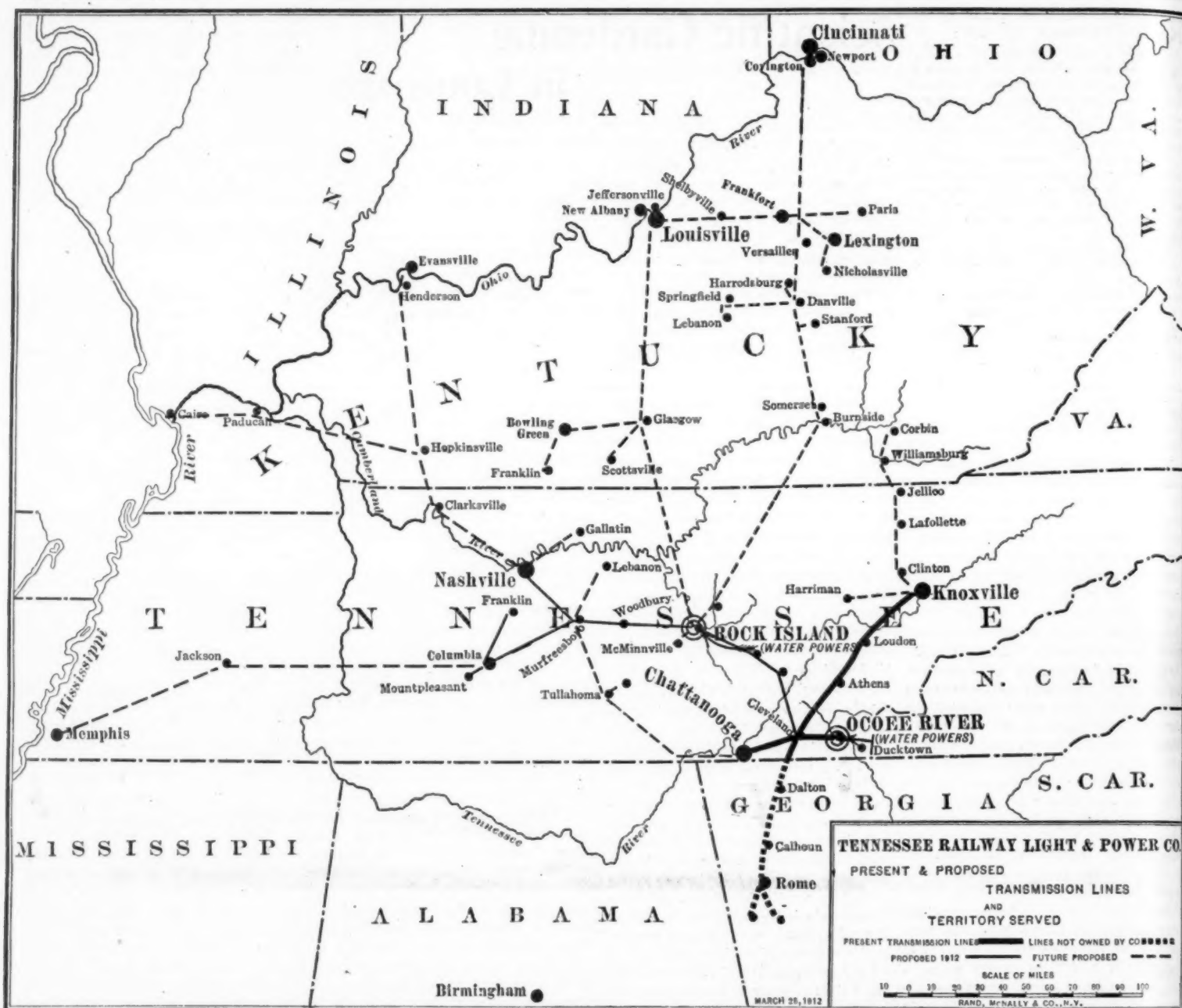
There are at present transmission lines from the Parksville plant via Cleveland to Chattanooga; also a line nearly completed from Cleveland to Knoxville, and another line from Cleveland south to the Georgia boundary and continuing thence under other ownership to Rome, Ga. The new

companies will enlarge the plant at Parksville, develop another plant on the same river and build additional transmission lines from Parksville via Great Falls to Nashville, and thence to various industries in the surrounding country. Contracts for furnishing current are to be made with the Chattanooga Railway & Light Co., the Cleveland Electric Light Co., the Knoxville Railway & Light Co., the Nashville Railway & Light Co. and the Georgia Power Co. at Rome, Ga. The plants will also serve large consumers of power at sundry places, for which contracts are now being made.

It is further stated the Tennessee Railway, Light & Power Co. will have approximately \$882,000 in its treasury for working capital, and that the Tennessee Power Co. will have also \$2,478,000 to use for new construction and other purposes. A large part of the properties under consideration will be acquired from the Eastern Tennessee Power Co. with the approval of its stockholders.

There will be issued now, in accordance





with subscriptions, \$7,500,000 of first mortgage 5 per cent. 50-year bonds of the Tennessee Power Co. and \$3,750,000 of 6 per cent. cumulative preferred and \$7,500,000 common stock of the Tennessee Railway, Light & Power Co., but the total capitalization of the enterprise is given thus: Tennessee Railway, Light & Power Co., preferred stock authorized \$50,000,000, outstanding \$10,250,000; common stock, \$20,000,000 authorized and outstanding; Tennessee Power Co., bonds authorized \$50,000,000, outstanding \$7,500,000; common stock \$20,000,000 authorized and outstanding.

The eventual installed capacity of the water-powers owned by the Tennessee Power Co. are:

Ocoee River—Parkville plant; now installed and in operation; 20,000 horse-power; provided in the underwriting 15,000 horse-power; total 35,000 horse-power.

Development No. 2—To be immediately installed from funds provided in the underwriting, 16,000 horse-power.

Site No. 3—Undeveloped; 30,000 horse-power.

Caney Fork River—Great Falls; two sites undeveloped, 80,000 horse-power.

Grand total, 161,000 horse-power.

The company's transmission lines now in operation and under construction are 148 miles long. Besides, there are to be constructed immediately from funds provided in the underwriting 272 miles; total 420 miles.

The firms interested are H. M. Byllesby & Co. of Chicago; E. W. Clark & Co., Philadelphia; Wm. P. Bonbright & Co., New York and London; Hodenpyl, Hardy & Co., New York.

#### Wants Woodworking Plants.

Commercial Club,  
Yazoo City, Miss., April 8.

#### Editor Manufacturers Record:

Influenced by the invasion of the boll-weevil last year, our people have turned to fruit and vegetable raising. In addition to this there will be planted, and are being planted, in the county immediately around Yazoo City about 1000 acres in Irish potatoes. We are making also staple crops for market of hay, corn and oats. This is an excellent opening for a box-making plant, as we have great quantities of timber suitable for such manufacture. A loose coöperation plant would also prosper here for Irish potato shipments. We have great quantities of cottonwood and sycamore suitable for staves for barrels of that nature. An agreement has just been signed by the representatives of Chicago construction people which assures the building of an east and west railroad through Yazoo City. This road will be partly finished by the end of the year, with an extension into Alabama contemplated, which it is proposed to have finished by January, 1914.

With the new railroad and the change in methods, substituting other crops large-

ly for cotton, plants of the kind indicated above should pay well here. The area of cultivation for things other than cotton will be greatly broadened. On account of the great quantity of timber, any wood-working plant would succeed here, especially in view of the improved freight rates to follow the proposed new railroad.

We are voting \$77,000 bonds for good roads in three beats of the county, and the city is about to vote on an issue of \$30,000 bonds for improvement of municipal utilities.

E. L. TARRY, Secretary.

#### Birmingham Notes.

Chamber of Commerce,  
Birmingham, Ala., April 13.

#### Editor Manufacturers Record:

Ten years' exemption from all city taxation for manufacturing industries has been granted by the City Commission of Birmingham at the request of the Chamber of Commerce.

F. L. Criswell, sales manager of the Herrin-Hall-Marvin Safe Co., has announced that he had determined to locate the Southern headquarters of his company in Birmingham, and that an assembling plant would probably follow in the near future.

President John W. Sibley of the Chamber is on a 10 days' tour, with three good factory prospects in view.

The recent purchase of the Peerless Corner at the price of \$145,000 for a lot

25x100 feet is the high-water mark for Birmingham real estate.

JOSEPH B. BARR, Secretary.

#### Building at Kingsville.

Commercial Club,  
Kingsville, Tex., April 10.

#### Editor Manufacturers Record:

The St. Louis, Brownsville & Mexico is preparing to expend \$600,000 in the construction of new buildings in Kingsville within the next 12 months. The new general office building, to cost about \$100,000, has reached the second floor, and is being pushed as rapidly as possible. This structure will be three stories in height, and will contain quarters for the entire office force now stationed in Kingsville and occupying three smaller buildings.

"Casa Gertrudis," the tourist hotel, will cost \$200,000. It will be L-shaped, each wing being 40 feet wide and 200 feet long. The building will be of reinforced concrete, and absolutely fireproof, finished in quarter-sawn white oak and cypress. The inside finishings and floors will be of quarter-sawn white oak on cypress sleepers.

Mr. Charles C. Gilbert, assistant secretary of the Board of Trade of Nashville, Tenn., is authority for the statement that 19 of the 23 counties through which will pass the Memphis-to-Bristol highway have made provision to the aggregate of \$602,000 for the construction of the highway either through bond issues or through county court appropriations.

# Reclaiming Land by Drainage

PROJECTS IN LOWER MISSISSIPPI VALLEY EMBRACING  
2,300,000 ACRES.

By HUGH R. McVEIGH of Memphis Tenn.

To write the history of the wonderful development of the drainage system in this section of the country it is necessary to show first the origin of the levee system, the completion of which has brought about the necessity for drainage canals.

All the lands in this section, that is, in Mississippi and Arkansas, were, as is well known, ceded to the United States by the Government of France in 1803, under what is known as the Louisiana Purchase. At that time the lands, of course, were

tention of the Government was called to it, with the result that Congress passed an act known as the Swamp Land Grant, the purpose of which was, to quote the act, "to enable the State of Arkansas and other States to construct levees and drains to reclaim the swamp and overflowed lands therein." Under this act there was donated to the State of Arkansas and other States "the whole of those swamp and overflowed lands made unfit for cultivation which shall remain unsold at the pas-

owing to the impoverishment of the people, the building of levees reverted to the old system of here and there, a detached piece, which afforded but little, if any, protection.

In the year 1884 the Yazoo and Mississippi Levee District was organized. This district extends from the Tennessee State line down through the Yazoo Delta, and was the first continuous levee built on the great river. The building of levees on the Mississippi side of the river increased the necessity for the building of them on the Arkansas side. In 1879 the Mississippi River Commission was organized under an act of Congress. It was made the duty of this commission to "improve and control the navigation of the Mississippi River." At one point on the river, that is, at what is known as the Plumb Point Reach, oppo-

these small levees afforded. In the year 1893 the St. Francis Levee District was organized. This district extended from the Missouri State line to the mouth of the St. Francis River, a few miles above Helena, Ark. The levee was practically finished some years ago. Since the completion of the levee system of that district the development of the country has been wonderful. Farmers found themselves no longer afraid to plant a crop because of possibility of losing it by overflow, or, when planted, of having to replant.

Before the completion of the levees in Arkansas and Mississippi several hundred thousand acres of land had been forfeited to the State for the non-payment of taxes, as the owners of the land did not consider them worth even the amount of the taxes



DRAINING YOUNG'S LAKE, 3000 ACRES, MISSISSIPPI COUNTY, ARKANSAS.

wild and unimproved, except for small settlements here and there on the banks of the rivers. The country became settled with a hardy class of pioneers, who, however, accomplished but little in the way of developing the country, owing to the frequent overflows from the Mississippi and other rivers, of course, more especially the Mississippi. These overflows were of almost annual recurrence, causing great suffering, loss of crops, stock, and often of life. To meet these conditions, planters here and there built levees to protect their immediate plantations, but there was no system in their building, and the protection afforded was only local, and that not always to be depended upon. The situation finally became so serious that the at-

sage of this act." The act became a law on the 28th of September, 1850.

After the passage of this act and the patenting to the State of the lands approved thereunder, the State sold the lands to settlers, the moneys arising therefrom being used in building levees. These levees, however, were, as a rule, built near the river banks, and did not afford protection to the entire country, and, in fact, there never was until many years after the Civil War the continuous line of levee. During that war the levees were necessarily neglected, and in many instances were cut by Federal soldiers as a war measure. For many years after the war, during what is known as the Reconstruction period, and for some years thereafter,

site Osceola, Ark., there had for many years been great difficulty in passing with heavily-laden boats, owing to the shallow water, the boats having frequently in time of low water to tie up, take off freight and thus lighter over the bar. Work was commenced by the commission at this point, and it was soon seen that to confine the river to one channel and to deepen that it would be necessary to build small sections of levee in Mississippi county, Arkansas, and a small section on the Tennessee side near Plumb Point. Not only was accomplished the deepening of the channel, but a great many acres of valuable farming lands were protected in a large measure from overflow. The floods continued, however, and with but such preventives as

due on them. As an aid to the levee districts in constructing their levees, these lands were donated by the State to the various levee districts, and by the districts sold as the building of the levees progressed. And now these lands, that is, uncultivated lands, valuable for timber, have been sold at from \$20 to \$60 per acre. Cultivated lands are held as high as from \$60 to \$200 per acre. The population of the counties within these districts has in nearly every instance doubled, while towns have sprung up like magic as the railroads penetrated the country. In Mississippi county, Arkansas, in 1893, when the levee district was formed, there were no railroads, while now there are three. The little city of Blytheville, in Mississippi



county, Arkansas, 15 years ago was a hamlet of less than 100 inhabitants. It now has a population of over 4500, as shown by the 1910 census; has paved streets, all the streets having cement sidewalks; handsome churches, hotels, and a very costly high-school building.

However, "Man never is, but always, to be blest." The levees were a necessity to the upbuilding of the country and its general development, and right royally have they performed their function. As the overflow waters were confined within the banks of the rivers, it was seen that it was further necessary to drain the rainwater from the level swamp land to fit it for a high state of cultivation. The water that fell from the clouds remained on the land, causing the soil to remain wet and in many instances unfit for cultivation. It was found necessary to dig ditches or canals. The levee districts at first did some of this in a local way, but it was not their special province, and it became necessary to form drainage districts. This has been done in Arkansas under a general act of the Legislature, and in Mississippi special districts have been formed.

As shown in the history of levee building, much experimental work has been done, such as building detached portions, with the result that they failed to accomplish the design, in that only a small portion of the country affected was drained. Similarly, the first drainage canals were comparative failures. This came about from the fact that payment for their construction was made by a direct assessment on the lands within the districts and paid for only as the funds arising from taxation accrued, there being then no authority to issue bonds. The canals thus built with insufficient funds resulted in a ditch entirely inadequate for the area to be drained, and very little relief was afforded by their construction. It was seen that without the power to issue bonds and thus have on hand adequate funds with which to not only hasten the completion of the canals, but to make them of adequate width, depth and length, it was useless to proceed. The facts were laid before the State Legislature, and upon consideration of the whole matter the power to issue bonds was granted. The bonds readily sold at par, usually carrying interest at 6 per cent. and made payable in 10, 20 and 30 years, as the districts might elect. From the proceeds of the sale of these bonds the work has gone forward rapidly and effectively.

Within the next three years there will have been expended for canals in these districts at least \$3,000,000. This is only the beginning of the drainage system of this section. The St. Francis Valley of Arkansas is the largest single unit of the Mississippi Valley, and in it alone there are 1,000,000 acres of land protected by levee and requiring drainage before it can reach its maximum state of development and productiveness.

Scattered throughout the State of Arkansas are a number of smaller valleys, which will aggregate in area from a few thousand to hundreds of thousands of acres, that require drainage before they can be developed. It is believed by those well posted that within the next 20 years at least \$20,000,000 will be spent for drainage and reclamation work. In that portion of the valley that has been drained, or is in process of drainage, the timber has been largely removed, or is in process of removal, and as fast as this is done the lands will be placed in readiness for cultivation. One large lumber company owning something over 100,000 acres of land in the counties of Mississippi, Craighead and Poinsett, in Arkansas, having removed the timber from a large part of its lands,



DREDGEBOAT AT WORK.

has now opened an office in Memphis and is offering its lands for sale to settlers, the lands being what are known as cut-over lands. This is being done by other large landowners, and as the timber is removed and the canals approach completion others will do likewise. The portion in which drainage is now complete was two or three years ago a paradise for frogs and fishes, but is now growing cotton, corn and alfalfa.

Capital, we are told, is timid, but really it is not so much timidity as a very natural desire to "be shown." As soon as it became known that the drainage system had become a certainty, the plans therefor were thoroughly examined by investors and investigations made as to whether or not the lands in the district were worth draining, and if the system planned would give the required drainage. Being satisfied as to these points, all doubts were immediately dispelled and outside capital at once began to flow into the districts and lands began to double and even triple in value. At first, as is usual in all public enterprises, there was opposition from those who objected to paying the taxes involved, but all that has passed away, and the people benefited are now as enthusiastic over the drainage system as they are over the success of the levees.

The fertility of the soil in these drainage districts is shown by the character of the timber. Before the completion of the levees the land was covered with the most magnificent forests. The gigantic size of the trees attested this fertility—oak trees from six to seven feet in diameter, cottonwood and cypress even larger and extending from 40 to 60 feet without a limb. These forests are being rapidly reduced and the land placed in cultivation.

The average cost of drainage canals is \$7 per acre, which is very reasonable when we consider that the additional cost for maintenance is almost negligible, while the average cost for irrigation of lands in our Western States is \$80 per acre, with an additional cost of from \$2 to \$3 per acre per year for maintenance, and with a tax for the use of the water. Corn, cotton and alfalfa are grown on these lands with the greatest success, corn producing from 40 to 75 bushels per acre, cotton from two-thirds to a bale and a quarter per acre, according to the season. Alfalfa is a comparatively new hay crop in this section, but wonderful success has attended its cultivation. A planter in Mississippi county, Arkansas, writes that "last year he cut six crops off his alfalfa field, yielding from one to one and one-half tons per

acre for each cutting." With such results as these it is not to be wondered that the people realize the necessity for a thorough drainage system.

As a concrete example of the developments that are taking place in this section in the line of drainage, take district No. 11 (or Golden Lake district). This is one of the districts of which Mr. Willis E. Ayers of Memphis is the engineer. The district was formed two years ago. Surveys have been completed, assessments made, and contract will be let within the next 60 days. The district comprises an area of 31,000 acres, 6000 of which are in a shallow lake, which is worthless at the present time in every sense of the word from a producing standpoint, being covered with water from two to four feet in depth the entire year. The remainder of this area is in a state of partial cultivation, but cannot be developed for agricultural purposes with any degree of success or economy until drained. The work will be completed within two years, at an approximate cost of \$225,000, or a minimum cost of \$1.50 and a maximum cost of \$10, the average being \$4 per acre. Upon the completion of this work the lake lands that are now worthless can be immediately placed in cultivation, and will be worth not less than from \$50 to \$75 per acre. To drain this district will require the digging of more than 40 miles of ditches.

At the present time the largest undertaking in this section of the South in the matter of drainage comprises what is known as the Chicot county, Arkansas, district, located in the southeast corner of the State. This district, of which Mr. Ayers is the engineer, contains approximately 400,000 acres. The preliminary survey of this whole district was started on the 15th of last September, and will be completed in 30 days from now. Plans will then be completed for the letting of the main ditches in the coming fall. At the present time only about 25 per cent. of the lands of this district are in cultivation, but when drained the whole of it can be cultivated with a high degree of success. This district will expend at least \$2,000,000 in securing its canals. Other districts of which Mr. Ayers is the chief engineer are the following:

District No. 13, in the southwest corner of Mississippi county, Arkansas. This district is intended to drain 30,000 acres, not over 25 per cent. of which is now in cultivation. It will require 38 miles of ditches and will cost \$125,000. Plans have been completed, bonds have been issued and sold,

and the contract will be let within 30 days.

District No. 8, in Mississippi county, Arkansas. This work will drain 56,000 acres, with 75 miles of ditches at a cost of \$265,000. Work is now under construction, having started April, 1911, and will be completed in September, 1913. Four steam dredges are now in use in this work.

District No. 12, near Osceola, Ark.; 8000 acres will be drained, which necessitates 10 miles of ditches. This work is cleaning out and enlarging old ditches, and will cost \$30,000. Contract has been let, bonds sold, and work was started January 1, 1912, and will be completed in about 10 months. As an evidence of the value of this work, it may be stated that upon the letting of the contract for the work, 480 acres in one body in the district, 400 acres of which were wholly undeveloped and lying in a cypress swamp, was sold for \$27,500.

District No. 7, in northern part of Mississippi county, Arkansas. This work drains 20,000 acres, required 12 miles of main ditches and 6 miles of laterals, and cost \$67,500. Completed in May, 1910.

Consart Bayou district, in Jefferson county, Arkansas. Drains 40,000 acres; contains 16 miles of main ditches and 10 miles of laterals; total cost \$100,000. Completed April, 1910.

District No. 9, in Mississippi county, Arkansas, is one of the largest in the State. It is designed to drain and place in readiness for clearing and cultivation nearly 200,000 acres. As showing the magnitude of the proposed work, the district has issued and sold its bonds to the amount of \$1,200,000. Contracts for the work have been let, and 293 miles of ditches will be required to drain this district. The greater part of the land in this district is almost worthless at present, but when the canals are completed and the land cleared it will rent for \$5 per acre the first year, second year \$7 and third year for \$10. This work is under the direction of the Morgan Engineering Co. of Memphis, Tenn. Other districts of which the company above named is the chief engineer or acting as advisory engineers are the following:

Cache River district, in Lawrence, Craighead and Jackson counties, in Arkansas. This district is to drain 200,000 acres at a cost of \$500,000. There will be approximately 250 miles of ditches. Plans are in course of completion, and will be ready for submission within 90 days.

Levee district No. 2 of Miller county, Arkansas, will build 40 miles of levee and 10 miles of ditches. Will drain 100,000 acres, the whole to cost \$400,000. Plans completed. Work commenced January 1, 1912.

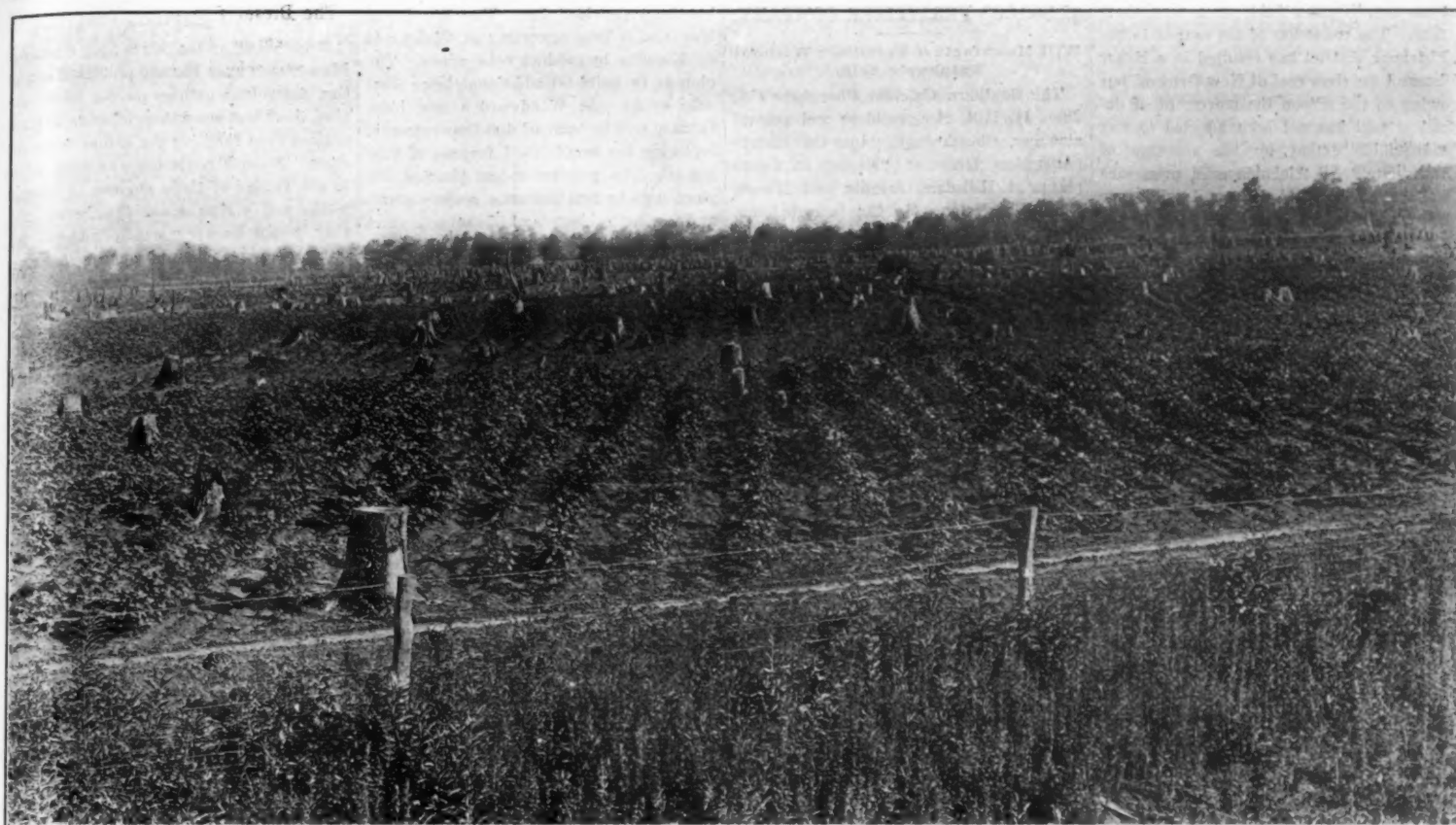
Two districts, drainage and levee, in Northwest Tennessee, about 100 miles north of Memphis, will drain 40,000 acres. There will be 60 miles of levee and 100 miles of ditches, the whole costing \$600,000. Plans are now partially completed.

District No. 2, in Madison parish, in Northeast Louisiana. This work will drain 50,000 acres, and will require 50 miles of ditches, to cost \$200,000. Contracts will be let in June of this year.

Little River district, in Southeast Missouri, will drain 500,000 acres. It will contain 700 miles of ditches. This canal will turn all the hill water from the Ozarks to the Mississippi at Cape Girardeau, Mo.; 700 miles of ditches will be required to carry off the water, and will cost \$5,000,000. The plans have been completed, and contract will be let during the present year.

Tri-State district, located in Mississippi, Scott and New Madrid counties, in Missouri. This district is now in process of





SECOND YEAR AFTER DRAINAGE OF ROUND LAKE, NEAR WILSON, ARK.

formation. It is intended to drain 300,000 acres, requiring approximately 300 miles of ditches, also about 25 miles of levee. The whole to cost at least \$1,500,000.

Central Clay district, in Clay county, Arkansas. To drain about 100,000 acres, with 15 miles of ditches, and the whole to cost \$600,000. The plans for this district are now being prepared.

St. Francis Drainage District, in Clay and Greene counties, Arkansas. To drain 132,000 acres and to build 35 miles of levee and 45 miles of ditches, at a cost of \$500,000. This work is nearing completion.

District No. 1 of Greene and Lawrence counties, in Arkansas. To drain 75,000 acres at a cost of \$225,000.

Inter-River district, in Southeast Missouri, in Butler county. To drain 140,000 acres, with 200 miles of ditches, and costing \$1,000,000. The preliminary plans have been completed and the district is now being organized.

As showing the large vision of the people of this section, it may be stated that the Rock Island Railroad Co. has pending in Congress a bill authorizing it to build at Memphis a bridge across the Mississippi that will cost well on to \$10,000,000. The citizens of Crittenden and other counties adjacent to Memphis, realizing the opportunity afforded by the building of the bridge, insisted upon and had incorporated in the bill provisions under which trolley lines will be permitted to use the bridge. The country thoroughly well drained means good roads, the springing up of towns and cities.

The next generation will see in this country one vast garden, in a high state of cultivation, and the only reminder that they will have of the once primeval forest, swamp and everglades will be the large game preserves held by such large outing clubs as the Big Lake Hunting Club, the Wapanocca, the Menesha and Duck Lake Outing Club. The membership of these clubs early saw that in a few years they would be unable to purchase the tracts that they now own, of from 300 to 10,000 acres, and so invested then, and have lands

that will always be valuable for their purpose either for hunting or fishing, but with these exceptions there will be nothing left of the old order.

#### ON A \$11 PER TON BASIS.

##### Developments of the Week in the Birmingham Iron Market.

[Special Cor. Manufacturers Record.]

Birmingham, Ala., April 15.

The local pig-iron market is now considered firmly established on a basis of \$11 per ton at Birmingham for No. 2 foundry for any delivery after July 1 next. As was the case at the time of last report, certain of the producers do not quote for shipment in the last quarter, but more or less tonnage is available for such delivery at the \$11 schedule. For spot shipment, and probably delivery prior to July 1, a limited tonnage can no doubt be had at \$10.50 to \$10.75 per ton at Birmingham for No. 2 foundry, but without the regular differential for the grades below No. 3 foundry. A small quantity of this last-named grade for immediate shipment is reported sold in the past week at \$10.25 per ton at Birmingham. The sale of 60,000 tons of machine cast foundry iron to a leading pipe manufacturer has just been confirmed, and has, of course, improved the general feeling in the market. The sales actually made in the past week aggregate some 8000 to 10,000 tons, and the bona-fide inquiries now pending involve some 12,000 tons addition. The manufacturers of cast-iron soil pipe, heavy machinery and stove, besides the smaller foundries doing general work, have been well represented in the most recent trading, while the manufacturers of car wheels and other railway requirements have bought more liberally. The movement against all contract sales continues very satisfactory, stock figures as of April 1 showing a reduction of some 25,000 tons in the aggregate accumulation during the month of March. The aggregate of all stock March 31, which includes the warrant holdings, was 100,000 tons. This aggregate does not include the charcoal iron stock, but does include the basic and off basic accumulation. A total of 20

furnaces were in blast April 1, of which 14 were producing foundry iron, four producing basic iron and two stacks producing warm blast charcoal iron, having 27 available stacks in the State out of commission. In view of the fact that the present stock accumulation is largely in the hands of three concerns, the situation is decidedly more nearly clear than for a long time past. Reports indicate that in the majority of cases present operations are well supplied with orders during the remainder of the first half and well up into the third quarter, while until just recently the provision made by the trade, when taken individually, is rather limited. Practically all lines of the trade have bought more liberally since the advance from the \$10.50 schedule, but without indicating a desire to provide other than for actual requirements. It is noted that very little tonnage, comparatively, has gone into the hands of merchant interests, while of the aggregate accumulation less than 50,000 tons is under warrant. A significant fact also is the small percentage of present order-book requirements that represent undelivered tonnage on old contracts.

In local circles it is generally believed that further advance in prices will soon be made, and that the bulk of the tonnage entered for shipment in the last quarter will bring a schedule of \$11.50 per ton. Much depends, however, on additions that are made to the producing capacity, as well as the movement from furnace yards during the next 30 days. The partial resumption of operations at the former Dimmick pipe plant at North Birmingham, Ala., has added materially to the local consumption. This plant was formerly one of the largest consumers in this district, and its inactivity during the past year has to a certain extent affected all quotations. The market is quoted as below for shipments prior to July 1, with an advance of 25 to 50 cents per ton quotable on deliveries further advanced. All quotations are per gross ton f. o. b. cars at Birmingham furnaces:

No. 1 foundry, \$11 to \$11.25.

No. 2 foundry, \$10.50 to \$11.

No. 3 foundry, \$10.50 to \$10.75.

No. 4 foundry, \$9.50 to \$10.

Gray forge, \$9.25 to \$9.75.

Standard basic, \$10.50 to \$11.

Off basic, \$10.25 to \$10.75.

Standard charcoal iron, \$22 to \$23.

No large contracts were awarded local pipe producers in the past week, the business transacted consisting of comparatively small lots for maintenance and extensions. The partial resumption of operations at the former Dimmick plant in North Birmingham, Ala., is of considerable interest to local operators, although there seems to be sufficient new business in sight to take care of the entire production. The improvements and additions to the plant referred to, being made by the present owners, the United States Cast Iron Pipe & Foundry Co., will hardly be completed before August 1 next, and at this time only 200 to 250 men are being employed to operate the capacity that has been put into commission. No further announcement has been made as to a change in operations at the Bessemer (Ala.) plant of the United States company. The soil pipe manufacturers are well supplied with orders, and have been able to realize more satisfactory prices. An advance in the price asked for regular sizes of water pipe is looked for, owing to the higher cost of raw material, but for the present quotations are as follows per net ton f. o. b. cars here, viz.: Four-inch to six-inch, \$23; 8-inch to 12-inch, \$22; over 12-inch average \$21, with \$1 per ton extra for class "A," or gaspipe, which are all per net ton f. o. b. cars here. An inquiry for some 2500 tons of class "A" pipe has just been received.

The steam coal situation is practically the same as last reported. Some additions have been made to the contracts being offered operators, and prices are very firm. The high water along the Mississippi River has checked the movement to quite an extent, and has resulted in further shortage of equipment, especially for the movement from Kentucky and Illinois fields into the competitive territory. The adjustment of labor troubles in foreign fields has had little effect locally, but should be reflected in the movement of coke



from the Virginia fields in a very short time. The reduction of the output in the Pittsburg district has resulted in a larger demand for river coal at New Orleans, but owing to the season the movement of domestic coal has not been affected to any appreciable extent by the shortage of anthracite. All Alabama coke ovens are well supplied with orders, and prices are being held very firmly at \$3.50 to \$3.75 per net ton for 72-hour brands. Practically no 48-hour coke is being offered, such operations having been replaced by the retort ovens.

The booking of some 12,000 tons of standard steel rails for requirement of the International & Great Northern Railroad, for production at local mills, was the feature of the finished material market in the week. Some small lots of light steel rails were engaged, and the volume of rolling-mill products that was reported sold is about in line with that of the week previous. The structural tonnage required for Birmingham's new million-dollar hotel will soon be under consideration, while there are some plans on foot for the erection of still another office building.

Formal announcement of the taking over of the properties of the Birmingham Coal & Iron Co. by the Woodward Iron Co. has been made. It is understood that the new company will be incorporated under the laws of Alabama within a short time, and that the officers will remain as at present.

It is now understood that operations will be commenced in the course of a few months by the Alabama Traction, Light & Power Co., a Canadian corporation that proposes the construction of a power plant with 100,000 horse-power on the Coosa River at a point near lock 18. It is understood that franchises have been secured for the construction of similar plants on the Tallapoosa and Tennessee rivers, with a view toward supplying electric current to various municipalities and ultimately operating interurban railways. Developments in this regard are being awaited with interest, as it has been announced that the company referred to will be incorporated under the State laws of Alabama within a few months.

The cooling plant now under construction at the power-house of the Birmingham Railway, Light & Power Co. will be completed and ready for operation about May 1. The Le Blanc system of cooling has been installed, and the plant, when finished, will have a capacity for cooling 12,500 to 15,000 gallons of water per day.

### The Coal Trade.

For 43 years F. E. Seward has been editor and proprietor of the *Coal Trade Journal* published in New York city and entirely devoted to the interests of the coal trade. In each of 39 of those years he has published a standard annual review entitled "The Coal Trade." The 1912 edition of this publication is a well-printed volume of 200 pages covering a mass of valuable information relative to coal production, prices, transportation, etc., at home and abroad, comprehensive and including many facts fit to be preserved for permanent reference. The range of this information is indicated in the fact that the table of contents fills nearly six pages and contains 760 lines of type. The importance of such a publication is suggested in the extent of the coal trade represented in an annual output of nearly half a billion tons in the United States and of a billion and a quarter tons in the whole world. "The Coal Trade" is published at 20 Vesey street, New York city, and its price is \$2.

### \$2,500,000 FERTILIZER COMPANY.

#### Will Manufacture Fertilizer Without Sulphuric Acid.

The Southern Calcium Phosphate Co., John H. Hill, vice-president and general manager, Chattanooga, wires the MANUFACTURERS RECORD: "Expect to locate plants at Hillsdale, Atlanta and Macon, Ga.; Charleston, S. C.; Birmingham, Montgomery, Selma and Mobile, Ala. Plant details not yet ready." It also confirms a report that includes the following statements: This company has incorporated with \$2,500,000 capital stock to manufacture fertilizer without the use of sulphuric acid, the process having been invented by George R. Fishburne (of Chattanooga), who is president of the corporation. Its first plant will be located at Hillsdale, to operate in connection with the Horine Development Co.'s cement, brick and lime works (now building), as crushed limestone enters largely into the new process. W. R. Hill is secretary-treasurer and Ellis C. Soper is consulting engineer of the Southern Calcium Phosphate Co., both of Chattanooga, where the company will maintain headquarters.

### A \$26,500,000 ALABAMA MERGER.

#### Woodward Iron Co. and Birmingham Coal & Iron Co. Combine Coal, Iron, Coke and Furnace Properties.

The Woodward Iron Co., Birmingham, wires MANUFACTURERS RECORD confirming report that its merger with Birmingham Coal & Iron Co. is complete, and states "there is no change in personnel of officials of this company. Management has not been authorized by directors to make any announcement in regard to proposed additions to plant." J. H. Woodward, president; A. H. Woodward, vice-president; R. H. Bannister, secretary-treasurer; D. E. Wilson, cashier. An authoritative report to MANUFACTURERS RECORD includes the following statements:

"The consolidation became effective April 1, its terms having been accepted by practically all of the stockholders of both companies and of the creditors of the Birmingham Coal & Iron Co. The Woodward Iron Co. of Delaware (the new corporation) has the following capitalization:

5 per cent. 40-year sinking fund gold bonds (total authorized amount \$25,000,000) .....	\$13,500,000
6 per cent. cumulative preferred stock, preferred as to dividends and principal .....	2,000,000
Common stock .....	10,000,000
Total .....	\$25,500,000

"The present issue of \$13,500,000 bonds is applied as follows:

To retire \$2,000,000 first mortgage 5 per cent. bonds of the Birmingham Iron Co. ....	\$2,000,000
To pay for properties acquired .....	9,000,000
To pay for improvements and expenses of consolidation and the corporate purposes of the new corporation .....	2,500,000

"The prospectus of the consolidation puts the earning power of the combined properties on the basis of past years at \$1,000,000 a year. The interest requirements are \$675,000, and a 6 per cent. dividend on the preferred stock would call for \$180,000, leaving an estimated balance for reserves and common stock dividend of \$145,000. The Woodward Iron Co. has three blast furnaces at Woodward, Ala., and two at Boyles, Ala. The total annual capacity is put at 375,000 tons of pig-iron. The combined properties are estimated to have 380,000,000 tons of coal, 286,000,000 tons of red iron ore and 10,000,000 tons of brown ore. The surface holdings are put at 37,000 acres. The company owns and operates 21.4 miles of railroad.

"An extensive program of improvements

has been provided for. The Woodward Iron Co. is now operating at Woodward 60 Koppers by-product coke ovens. The plan is to build 90 additional by-product coke ovens. At Woodward a new blast furnace will be built of 400 tons capacity, replacing the small No. 1 furnace of that group. The present steam blowing engines will be retained as a reserve plant, and two turbo-blowers of 55,000 cubic feet capacity will be installed. The whole power plant will be operated condensing. The No. 2 Vanderbilt furnace, which is the larger furnace at that plant, will be relined, as well as its stoves, and will be equipped with a new top. At the Mulga coal mine of the Woodward Company a second shaft will be equipped so as to bring the output of the mine up to 2500 tons a day. At the Woodward blast furnace plant an impounding reservoir will be built with a capacity of 200,000,000 gallons. A high-pressure reservoir, which is provided adjacent to the furnaces, has a capacity of 15,000,000 gallons. The new construction will begin at once."

### To Have a Bag Factory.

Commercial Club,

Orange, Tex., April 9.

Editor *Manufacturers Record*:

Orange has a plant manufacturing paper out of yellow pine fiber. This led our people to think of some way to further use the output of this magnificent \$1,250,000 factory. After thoroughly exhausting every reasonable avenue of inquiry, F. H. Farwell, president of the Orange Commercial Club, took up with H. E. Westervelt, president of a paper-bag factory of Decatur, Ill., the matter of establishing a paper-bag factory in Orange. The establishment of such a factory in Orange brings the factory to the raw material and the finished product direct to the consuming market, saving freight on both commodities. The result will be that by the first of August, or thereabouts, a factory will be built costing \$100,000 to \$150,000 and giving employment to not less than 60 persons.

Orange will have a 25-foot channel to the Gulf of Mexico just as soon as the Government can build it. Orange county is spending \$200,000 on good roads under Federal Government supervision, and we have \$1 for \$1 to meet any prospective investors. S. H. WALTHALL, Secretary.

### Inducements at Greenwood.

Business League,

Greenwood, Miss., April 10.

Editor *Manufacturers Record*:

Upon reconsideration of a committee of the Business League, the Board of Mayor and Aldermen has agreed to grant to desirable factories and new enterprises free lights and free water for five years, and to exempt their property from city taxation for ten years, as provided by the Legislature of 1910. We consider free lights and water and exemption from all taxes should appeal to quite a few desirable manufacturing enterprises to our progressive city and State.

During the past week many engineers have been in Greenwood figuring on plans for street paving which is soon to begin, and the contract for the preparations of the plans and specifications have been let to Mr. C. Allen, a well-known engineer of Greenville, Miss. It has not yet been decided what kind of paving will be used. The Board of Aldermen is now considering the various kinds of paving, and it is possible that the class of construction will be decided upon next week. Construction work will begin as soon as plans are approved. G. W. CARTER, Secretary.

### The Diesel Engine's Progress.

Some eight or ten years ago, when the MANUFACTURERS RECORD published one or two descriptive articles on the Diesel engine, there was some skepticism as to these engines ever fulfilling the claims made for them. Special reference was then made to the future of these engines in marine work, and claims made that eventually they would be very widely adopted for oceangoing steamers and likewise for warships.

The rapidity with which these engines are now being installed in this country and abroad, and the great amount of shipping already under construction to be operated by Diesel engines was recently mentioned in an interview in the MANUFACTURERS RECORD with Mr. Thos. A. Edison, who referred to the fact that his old-time German company, the Allgemeine Elektrizitäts-Gesellschaft, which has in its employ 60,000 hands, is busy building Diesel engines, and now the announcement comes from London of the organization of two companies to build Diesel engines in England. One is the Consolidated Diesel Engine Manufacturers, Ltd., which has a capitalization of £750,000, and the other is the Burmeister and Wain (Diesel system) Oil Engine Co., Ltd., which has been organized with a capitalization of £550,000. The dispatch from London published in the daily papers, referring to the organization of these two companies, says:

"Two companies have been formed this week and are applying to the public for capital in connection with the Diesel engine, which has come very much to the front recently owing to the adoption of oil fuel for marine and manufacturing purposes."

And thus once more information published by the MANUFACTURERS RECORD in advance of a general acceptance of the facts is being rapidly fulfilled.

### Industries at Bristol.

Board of Trade,

Bristol, Va.-Tenn., April 15.

Editor *Manufacturers Record*:

The Board of Trade at its annual meeting on April 11 re-elected Henry Roberts president and E. W. King and S. M. Vance vice-presidents. Reports showed that not an industry closed down during the year except two, which temporarily suspended operation during the construction of additions to plants and the installation of new machinery, and that \$250,000 had been invested in homes during the building season of 1911, while \$500,000 was represented in other lines of building operations and machinery.

By reason of the construction of the Watauga dam and the recent transmission of power direct to this city, Bristol has cheap hydro-electric power. Practically all of the woodworking plants have taken out their fire and steam fittings and installed the newer and more economical power.

In less than 30 days the new \$100,000 washing compound plant will be started. Machinery has been installed for the manufacture of containers; in fact, the plant is so complete that practically everything used in getting this product ready for the consumers will be manufactured on the ground. F. M. RUNNELLS, Secretary.

### \$160,000 for Two Years' Work.

[Special Cor. Manufacturers Record.]

San Antonio, Tex., April 13.

With an actual membership of more than 2000 citizens and funds pledged to the amount of \$160,000 for the next two years, the San Antonio Chamber of Commerce is just entering on a new period of active effort.

# Drainage Congress at New Orleans.

[Special Correspondence Manufacturers Record.]

New Orleans, La., April 13.

After three days of speechmaking, in which plans for drainage of all the swamps and other wet lands of the United States were discussed and the benefits that would follow the work were pointed out, the National Drainage Congress adjourned last night, to meet in Charleston, S. C., in January, 1913. Today 250 of the delegates and visitors are being shown the drainage operations and the reclaimed lands in St. Charles parish, around Paradise and along the Lafourche by local real estate owners in a special train provided by the Southern Pacific Railroad.

In one sense the present high water in the Mississippi River and tributaries was a drawback upon the congress, in that the floods interfered with the attendance from sections affected, but on the other hand present conditions, affording a profoundly impressive object-lesson, were utilized by many of the speakers to emphasize the paramount importance of immediately and effectively providing such additional levee protection, together with impounding basins or reservoirs, as would insure the entire Mississippi Valley from the danger of any future overflow.

There were various plans proposed for the complete drainage of the 75,000,000 acres of swamp and wet lands of the United States, the scope of the congress being national in character. There were also diverse suggestions as to the method best suited for taking care of the flood waters of the streams emptying into the Mississippi River. The resolutions committee had a prodigious work on hand, and finally reported a document of 100 typewritten pages. Summarized, it was the consensus of opinion that the Government should take charge of the levees of all the navigable streams, making them impregnable and keeping them in repair, and should also take charge of drainage canals in which interstate features enter, while States and parishes or counties should handle local, non-navigable streams and drainage canals affecting a considerable area, and individuals should continue to look after the drainage of individual tracts, all in accordance with a comprehensive plan to be worked out by local and State engineers, in conjunction with Government engineers and under their direction.

With the intent to give permanent, practical force and effect to the aims and purposes of the congress, the office of director of the congress was created. M. O. Leighton, an engineer connected with the United States Geological Survey, who has had large experience in irrigation and drainage work, was chosen for the directorship. He will enter on his duties May 1, and will maintain an office in Washington, D. C. He states that he will at once organize an energetic campaign, with the object of getting results. A delegation leaves here tonight for Washington to urge Congress to act immediately on plans for rebuilding the broken levees and for controlling by impounding basins the sources of flood water supplies, and to hold up the sale of machinery used in Panama Canal construction, so that it may be utilized by the Government in making levees and in other work the Government will be asked to do as its part toward preventing the overflow of the lowlands.

Mr. Leighton proposes to establish a press bureau, which will be organized along the lines of the press bureau as commonly known. There will also be a bureau

of information, which will be put in charge of an expert engineer, who will be able to answer questions of every kind relating to drainage matters anywhere. These questions and answers will be published in bulletin form for general distribution. A membership department will be devoted to securing members in all of the 43 States which have drainage requirements, although the chief interest and activity is expected to be in the 18 States which have more or less intricate drainage problems. There will be a woman's department, in charge of a woman yet to be selected, who will have ability to secure the co-operation of women's clubs and other organizations of women in behalf of the objects of the congress. Director Leighton will supervise the entire work, which will aim to build up a strong organized force for the education of the whole people and of Congress especially to the urgent necessity of drainage work, levee building, etc., and he will include in his activities consideration of the engineering features of the work.

Some of these objects were covered by the resolutions as adopted. The larger part of the report was devoted to a bill spread on the minutes as something to work from in the preparation of a final measure to be introduced into Congress. Other resolutions asked for an appropriation of \$1,000,000 a year until the completion of the Panama Canal and \$50,000,000 a year thereafter for 10 years for regulating the rivers for purposes of navigation, irrigation, swamp land reclamation, development of water-power, reforestation and prevention of soil erosion and waste, under plans to be marked out by a board of army engineers, other engineers and constructors of eminence, to be appointed by the President of the United States, the board to be co-operated with by the scientific services of the Federal Government. The Drainage Congress was instructed to call a conference at Washington of all the national and departmental organizations working for the general development and conservation of natural resources for the purpose of co-ordinating the constructive work of all. Congress was asked to order a complete survey of all swamp and overflow lands in the United States.

The United States Government was urged to provide military and naval protection of the passes at the mouth of the Mississippi River.

Committees were directed to be sent to the national political conventions to secure a plank in the platforms endorsing the policies of the Drainage Congress.

It was urged that a conference be called to simplify and standardize the drainage laws of the several States.

In carrying out the campaign of education decided on the economic value of reclaiming swamp and overflow lands and making them fit for agriculture will be impressed on the public, and it was urged that the agricultural department of each State represented in the Congress should aid in this work of publicity, and that the subject of reclamation be added to the curriculum of the schools in order to educate the youth of the country to its importance. It is a fact significant of the importance attached to the congress that practically every one of the speakers on the long three-day program, with its morning, afternoon and evening sessions daily, was in attendance, and in the case of the two or three absentees their places were filled by delegated substitutes. There was

interesting matter presented by every speaker, and some of the addresses were notably impressive.

Senator-elect Joseph E. Ransdell, now member of Congress from a North Louisiana district and an authority on waterways and drainage, pointed out the absurdity of a recently-printed statement by an eminent engineer that there is danger of Louisiana being overflowed by the present flood. He showed that if every acre of land in the State which could possibly be reached by water from the streams were to be inundated there would still be 32,000 out of the 47,000 square miles of the State that would not have a drop of river water on them. And most of the 15,000 square miles that might be flooded if all protection were removed never has, within the memory of man been overflowed, he said.

Mr. Ransdell gave figures showing that, whereas Louisiana receives the waters of 24 States, making it incumbent, in all fairness and justice, that the burden of protecting this State from overflow be largely borne by the General Government, the State and levee districts of Louisiana have spent \$35,500,000 in levee construction, while the Government has contributed but \$12,500,000. The levees must be strengthened and built higher, he contended, and the Government should do the major part of this work.

Senator Francis G. Newlands of Nevada, who has been a leader in Western irrigation legislation, spoke on the subject of drainage and river regulation. Nearly all the suggestions he made in his address were incorporated in the resolutions as adopted. He laid special stress on the importance of eliminating piecemeal work and the spoils system from improvement work, and said he had long urged legislation providing for the co-ordination of the scientific services and the constructive bureaus of the nation with the army engineers in making plans to deal with all the problems related to waterways regulation. These included navigation, the reclamation of arid lands above, swamp lands below, and the intermediate development of water-power; the storage of flood waters in reservoirs, and by forest cover in the ground. His plan would enlist the co-operation of the States, municipalities, districts and other local agencies with the nation. He would not interfere with the work being done by the Mississippi River Commission, but, on the contrary, would enlarge its scope of operations, it being proposed to add the chairman of that commission to the co-operative board of experts named. His plan, he said, would regulate and practically standardize the flow of the great navigable streams of the country—the Mississippi, the Ohio, the Missouri, the Sacramento and the Columbia and their tributaries. In doing so, and as a means to that end, it would protect from destructive floods the cities and communities, the farms and plantations that line their banks.

He said Congress heeds in proportion to the vigor with which demands are made, and he urged immediate and vigorous action. He urged the Drainage Congress to unite the various waterways associations and the Rivers and Harbors Congress in the appointment of committees to appear at Washington and urge both upon Congress and the President the importance of immediate action. The Mississippi flood, he said, had accentuated the whole movement. It had capped the climax. The drama of destruction should be immediately followed by a drama of construction. The Panama Canal service should be transferred to the Mississippi as work at Panama is diminished. If the Drainage Congress and the other waterway associations, agreeing among themselves, will

unite upon some co-operative measure, full and comprehensive in its nature, that will embrace the co-operative purposes of all, Congress will respond.

Telegrams were read from B. F. Yoa-kum and others strongly endorsing the proposition to have the Government transfer its Panama Canal service to the Mississippi as fast as the need for it at Panama disappeared.

What drainage of her wet lands means to Louisiana was discussed by Edward Wisner, J. F. Coleman and many others, who referred to the vast benefits which would accrue to the city of New Orleans, the State of Louisiana and the entire nation when the 9,000,000 or 10,000,000 acres of unoccupied lowlands are put in cultivation and become the homes of a million or more of prosperous farmers and truck growers. Dr. E. B. Craighead, president of Tulane University, spoke of the potential value of the 10,000 acres of wet lands recently donated to the university by Edward Wisner, and forecast the time when this would be worth millions of dollars and would have a model city of 10,000 people on the tract, and he believed that with the drainage of all the wet lands around New Orleans Louisiana would become a State of almost fabulous wealth and New Orleans realize the dream of Thomas Jefferson by becoming a world metropolis. Geo. H. Maxwell, the well-known irrigation and waterway expert, who has been identified with the Drainage Congress for some months as head of the board of control, aroused the enthusiasm of the audience on more than one occasion with an eloquent portrayal of the city New Orleans will become when the Panama Canal is built and the wet lands around the city are drained, cultivated and occupied.

John Dymond, a native of Ohio, but for many years a sugar planter in Louisiana and editor of the first sugar journal established here, gave an interesting history of cane planting and sugar-making in Louisiana, and cited the fact that the Louisiana planters have always been foremost in improved methods of planting and sugar-making, so much so that sugar planters of other countries come here for ideas and machinery. He believed that with favorable legislation the present large plantations would be maintained, to the advantage of the State and the nation, and that with the drainage of the wet lands of the State the production could be greatly increased. He eulogized Louisiana as the garden spot of the world, and predicted a future of dazzling splendor.

State Senator Henri L. Gueydan of Vermilion parish read a carefully-prepared paper on the importance of fostering the sugar industry, which would be destroyed should the Underwood bill become a law. If sugar were put on the free list the whole industry would be wiped out, involving a loss of \$200,000,000 to the planters of Louisiana alone, and incidentally vast amounts to the people outside who furnish the mules, machinery, implements, foodstuffs, clothing, etc., required on the plantations of Louisiana. The consumer of sugar would in the end be at the mercy of foreign sugar producers, and would receive no benefit whatever, and the Government would lose the \$52,000,000 revenue now derived from the import duty. This is the first time, Senator Gueydan declared, that any political party has ever made such an attack on agriculture.

Governor J. Y. Sanders spoke on the relations between drainage and good roads. Any road is a good road in dry weather, he said, and no road is a good road if not drained. Drainage and good roads go hand in hand. According to plans mapped out by the State Board of Engineers of



Louisiana, there will ultimately be constructed a metal-surfaced road reaching from every county-seat to every other county-seat in Louisiana, but this cannot be accomplished without drainage. He said no people were so poor they could not afford good roads. The necessity of the hour is to make farm life attractive. With an impassable mud hole for a road two farmhouses only a mile apart were as isolated as if they were a thousand miles from each other.

The effects of drainage on health were discussed by Dr. Oscar Dowling, president of the State Board of Health of Louisiana, who said it was estimated the drainage of all the swamps in all the States of the Union would result in a saving of \$2,250,000,000 a year in the health and efficiency of the population and of 200,000 human lives. Dr. J. Birney Guthrie of New Orleans presented tables he had compiled which showed that since New Orleans drainage system has been installed there has been a falling off in deaths from malarial diseases from 180 per 100,000 population in 1886 to 9 per 100,000 population in 1911, a decrease of more than 2000 per cent.

Judge Robert E. Milling of Franklin, St. Mary's parish, the joint author of the drainage bond law of Louisiana, explained the workings of that law and demonstrated the soundness of the bonds and their ample basis of security. When thoroughly understood they would be highly regarded and sought after, as had been the case with the Louisiana levee bonds.

Among other speakers were ex-Governor David R. Francis of St. Louis, W. Y. Park, vice-president and general manager of the Illinois Central Railroad; Isham Randolph of Chicago, C. W. Sutton, Government engineer for Peru, and Niel Nielsen, member of Parliament, Australia.

Incidental features of the congress were the presentation of a gold watch to Geo. H. Maxwell and a loving cup to Edmund T. Perkins by citizens of New Orleans. Mr. Perkins was largely instrumental in organizing the congress in Chicago last December, and as acting president he performed a large part of the work in bringing about the second meeting. He will be continued as first vice-president. The officers chosen for the ensuing year are:

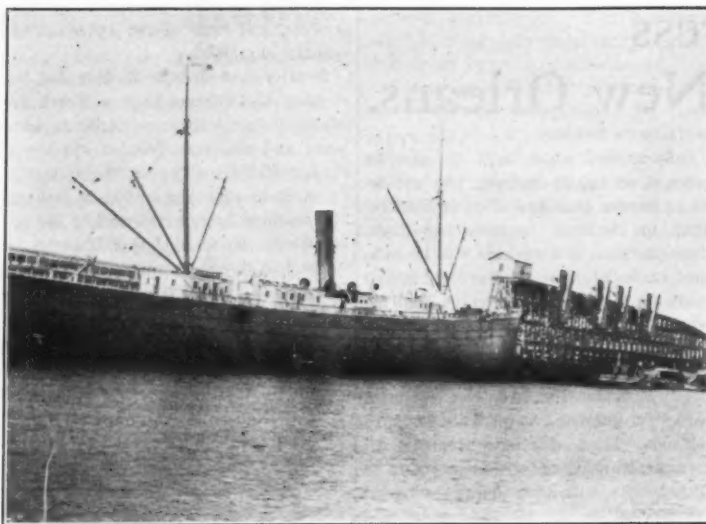
President, David R. Francis, ex-governor of Missouri; first vice-president, Edmund T. Perkins, Chicago; second vice-president, E. J. Watson, South Carolina; third vice-president, Col. Wm. C. Gorgas, U. S. A.; fourth vice-president, Bernard R. Baker, Baltimore; fifth vice-president, Edward Wisner, Louisiana; director, M. O. Leighton, United States Geological survey.

ALBERT PHENIX.

#### Additional Facilities at Texas City.

That additional terminal facilities will be provided at Texas City is outlined in a special dispatch to the MANUFACTURERS RECORD from R. M. Orth, who wires as follows:

"Texas City Transportation Co. has awarded contract to James Stewart & Co., Chicago, for erection of steel and concrete pier and double-decked warehouse on old Inman dock; 900 feet long and 300 feet wide, affording berthing room for five steamers with capacity 40,000 bales of cotton at shipside; also let contract for five cotton concentrating warehouses on unit plan, but connecting with each other and shipside by conveyors; all to be completed by September. Several large cotton exporters have formed an association and are now contracting for large high density cotton compress near shipside, available for next cotton season."



MALLORY LINER "COLORADO" TAKING A LUMBER CARGO AT PORT BOLIVAR, TEX., FOR NEW YORK.

#### To Develop Arkansas Land.

Referring to plans for developing Arkansas land, Gerard B. Lambert, president of Arkansas Logging Co., 527 Fifth avenue, New York, wires the MANUFACTURERS RECORD as follows:

"Have purchased approximately 7000 acres Phillips county and 23,000 Desha county virgin timber. Name of holding company, Delta Land Co. Logging in Desha county now. Have not figured yet on drainage cost."

Supplementing his telegram, Mr. Lambert writes as follows:

"This purchase was made the early part of this winter by a group of men representing largely Eastern capital and some interests in Memphis. The entire property of approximately 30,000 acres is covered with virgin timber—hardwoods, such as oak, gum, cypress, etc. It is our idea to cut the timber from this tract as fast as possible, then to arrange a drainage system and to farm the land. For the present we have obtained no estimate on the cost of drainage for this particular tract, and are going ahead with the work of cutting the timber as fast as possible. From reports we have the soil in this territory is remarkable for its agricultural possibilities. As soon as the property is prepared we shall proceed to farm it on a large scale. We intend to keep the entire property entirely under our control indefinitely. We believe that in this district of the South there is remarkable opportunity for investment. Such an investment is not of a speculative kind. The remarkable developments and growth of the country are becoming more apparent every day."

#### Kentucky Cement and Coal.

Plans for an important Kentucky cement and coal enterprise are outlined in an authoritative statement to the MANUFACTURERS RECORD as follows:

"The Kentucky Portland Cement & Coal Co. has incorporated; capital \$1,200,000, all common, with an issue of \$1,200,000 first mortgage 6 per cent. gold coupon bonds. Officers: E. M. Newton, president, 1025 Munsey Building; Robt. S. Maslin, vice-president, 200 Maryland Trust Building; Harry J. Matthews, treasurer, Fleet & Albemarle streets; Wm. L. Haworth, secretary, 1025 Munsey Building, all of Baltimore, Md. The directors are the officers named and Col. J. A. August of Washington, D. C.; John Stinson of Baltimore and Col. John L. Griffith Lee of Belair, Md. Engineer in charge, John W. Dreischach, 1025 Munsey Building, Baltimore, Md., and Pine Hill, Ky.; cost of cement plant, including coal mine

equipment, about \$900,000; daily capacity of cement plant, 2000 barrels; daily capacity of coal mines, 500 tons, estimating 325 tons of lump and 125 tons of nut and slack; 1200 acres of coal lands, three veins of coal aggregating in thickness about 10 feet; 800 acres of limestone and clay. Mr. Newton is one of the pioneers in the cement industry, and has been associated with the building of a number of successful cement plants. Mr. Dreischach, general superintendent of construction, is a practical cement manufacturer, and has been superintendent of construction of several of the largest plants in the East."

Some weeks ago the MANUFACTURERS RECORD stated that the Federal Finance & Construction Co., Emery M. Newton, president, had organized to finance a cement proposition in Kentucky.

#### Ozark Power & Water Co.

Contracts have been let and constructive operation are now under way for the first hydro-electric development of 15,000 horse-power on the White River, in the Ozark Mountains of Missouri. Additional sites are being considered, and it is expected that ultimately 45,000 horse-power will be developed. The Ozark Power & Water Co. contemplates the development of at least one additional site within two years. The initial 15,000 horse-power generating station will be located near Forsyth, Mo. Alternating three-phase current will be generated for transmission at 66,000 volts. The high-tension transmission system planned comprehends 43 miles of line extending from the hydro-electric plant to Springfield, Mo., and 80 miles from Springfield to Joplin. At Springfield a substation will be built and necessary feeders extended to supply current for traction, lighting and power purposes, the power company having executed contracts with the Springfield Gas & Electric Co. and the Springfield Traction Co. for their entire power requirements for 25 years. Connection will be made at Joplin with the transmission system of the Empire District Electric Co., now furnishing power and light service to 100,000 people in the famous Southwest Missouri lead and zinc mining district. An agreement has been concluded with the Empire company for the delivery of surplus power from the Ozark plant when required and the interchange of power during deficiency or interruption in either case. Along the transmission lines are 10 towns, with 55,000 population, and lead and zinc mining, smelting and other industries as available consumers.

The dam, 50-foot Ambursen patented reinforced concrete construction, and powerhouse are being built by the Ambursen Hy-

draulic Construction Co., Boston. The hydraulic machinery, including five pairs of 48-inch S. Morgan Smith water-wheels, governors, gates, trash racks and all appurtenances, will be installed by the S. Morgan Smith Company of York. The electrical equipment in the main powerhouse consists of five 2250 K. V. A. 2300-volt generating units, each direct connected to a pair of wheels, two 175-kilowatt exciters, seven 2000 K. V. A., 2300-66,000-volt transformers and switchboard. The substation at Springfield will contain four 1550 K. V. A. 66,000-2300-volt transformers, switchboard and all necessary protective devices. All this apparatus will be furnished by the General Electric Co., Schenectady, N. Y. It is anticipated that the plant will be completed early next year and be in full operation by April 1.

#### Conroe for Growth.

Progressive League,  
Conroe, Tex., April 9.

Editor Manufacturers Record:

Texas is a very large State, and it is going to take a long time to fill it up with people, notwithstanding they are pouring in trainload after trainload. There are portions of the State being more rapidly filled than others. Conroe and vicinity being in the hands of the lumberman, has not been settled as thickly as some other places, yet we have a country that cannot be excelled for truck growing, hog and poultry raising and dairying. Our town is 39 miles north of Houston, at the junction of the International & Great Northern Railroad and the Gulf Coast & Santa Fe Railroad. There is a beautiful natural lake just south of town, with its lovely banks covered with stately pine and other timber. We are contemplating making a fine resort out of it for the benefit of tourists. Many come from towns up in the State to camp and fish. Conroe was burned out in the business portion a year ago. The old frame buildings have been replaced by substantial brick buildings. Several more will be erected this summer. We have a handsome large school building that cost \$25,000. In summer our town, being somewhat scattered, has the appearance of a large park. The writer has been here a year, and in that time organized a Business Men's Progressive League and a Fruit and Truck Growers' Association, and extends a cordial invitation to his Northern friends to come and see us. You will enjoy every moment. We can raise strawberries, blackberries, raspberries, grapes, peaches, apples, persimmons, and, in fact, everything that is good, nine months in the year.

O. B. MONNETT, Secretary.

#### Invite Plans for Courthouse.

The building commissioners of the Yalobusha county courthouse at Water Valley, Miss., will inspect plans and specifications on May 1 and hear architects with a view of selecting plans for a new courthouse. The new structure will be erected on the old foundation, which was partially destroyed by fire, and the old walls will be utilized as far as practicable. J. G. McGowan of Water Valley is secretary of the building commissioners.

#### Seeking a Southern Location.

A refrigerating engineer is seeking a Southern location for an ice plant and steam laundry, desiring to establish the plants in some town where these enterprises are needed. He has capital, and will invite co-operation from investors where he decides to locate. Correspondence addressed to "Refrigerating Engineer," care of MANUFACTURERS RECORD, will be forwarded.

# Immigrants in Colonies.

## WEAKNESSES IN THAT PLAN OF SETTLEMENT POINTED OUT.

[Special Correspondence Manufacturers Record.]

Houston, Tex., March 30.

Is it a blunder to colonize foreign immigrants on the raw lands of the South? Are attempts in that line foredoomed to failure? These are pertinent questions for all of us who are working in our various lines to people the reclaimed and reclaimable wet lands and the cut-over lands of the South.

As all America that is settled at all is occupied by either immigrants or descendants of immigrants, and large colonies of foreign people, like the Acadians of Louisiana, and many others in lesser magnitude, have "stuck" and become permanent fixtures, it had never occurred to me to question the wisdom of such projects, for instance, as inducing Hollanders to settle in colonies on the reclaimed wet lands of Louisiana. For the first time I have heard some very strong arguments against that and any similar movement, and so cogently and emphatically were the reasons stated that the matter appears to be worthy of serious consideration and thought.

The proposition was put to me in the course of a conversation I have just had with Mr. Theo. F. Koch, a veteran land developer, with offices in Houston and elsewhere in Texas. Mr. Koch is a native of Holland, but has been in America for 30 years. He has had a wide experience in colonization projects, having operated in the Northwest from Chicago for many years before transferring his activities to Texas. He and his associates own and are developing some 50,000 acres of Texas raw lands, one tract of 25,000 acres being near Beaumont, in Jefferson county, and another of similar area south of Corpus Christi, in Nueces county. He operates in a big, broad way, proceeding by conservative methods to substantial results. His process is to people his lands with settlers who stick, and in doing this he works through agents who get into contact with possible immigrants rather than attempting to make a clean-up of his holdings by sales to an unknown public by means of alluring literature.

After learning his nationality I told Mr. Koch I had a belief that Louisiana's reclaimed wet lands were ideally adapted to colonization by his fellow-countrymen, who are envied by reclamation projects vastly more extensive and costly than any demanded by conditions in Louisiana. Being familiar with dykes and canals, I regarded the Hollanders as especially adaptable to Louisiana's lowlands, and considered that the work of locating Hollanders in colonies in that State would be of great benefit to both the colonists and the State.

"I am certain the enterprise would meet with dire disaster," was the surprising rejoinder of Mr. Koch. "Most, if not all, of such people would become discouraged in time and would return to their old homes or to more developed sections of this country, and their dissatisfaction, their 'knocking' and their desertion of their lands would do this country infinite harm. I have long since ceased to look to European countries for settlers on my lands. I get people who have become Americanized—who know the language, the laws, the markets and the country's conditions generally. The States to the north and even Southern States contain people who for various reasons desire a change. In the thickly-

settled communities to the north are many families who want to escape the rigors of Northern winters. Young men also have opportunities for securing farms of their own at comparatively cheap prices which they don't find in their home sections. Thus I am locating people all the time from Iowa, Illinois, Indiana, Ohio and other Northern States. Also there are people in the South who want different climatic conditions. The man in the Panhandle of Texas is attracted by the greater rainfall of the Jefferson county district, while the man who believes he would like a drier climate or who wants to go from a higher to a lower altitude will move from Alabama, Mississippi, Louisiana and other parts of Texas to the lands we are developing in Nueces county.

"While, of course, the desire for change may result in a percentage of these settlers selling out and going away from time to time, there are no such possibilities of wholesale desertion and disaster as in the case of the colonization of aliens.

"You say conditions in Louisiana are similar to those of Holland. In a sense that may be true. But you must remember that the Hollander of today knows nothing about the reclamation of the lands. He is the heir to pioneering work done generations ago. His is a finished country, and he would find pioneering as strange an experience in Louisiana as the mountaineers of your own country would. All of Europe is developed now in a way that was unknown when America was first settled. The comforts and conveniences of civilization are there, and people accustomed to such a life would inevitably rebel against the discomforts of pioneering in a strange land.

"There are no conditions in Europe that would inspire such migrations as have occurred in the past. Religious zeal fired the Puritans to brave, without complaint or regret, the rigors of existence, or attempted existence, on the bleak and Indian-infested shores of New England. The persecution of the Huguenots, the Irish famine and the German political troubles of 1848 furnished an inspiration for immigration to America which does not exist anywhere over there today. Those peoples would have endured any hardships. Immigrants of today are looking for improved physical and financial conditions. If they don't get them, they will certainly kick, and kick hard.

"This is true of any European immigrant, and while there are added complications in the case of those who do not know the English language, yet there are troubles enough with the English-speaking immigrant. I remember the case of a colony of several hundred English and Scotch immigrants who had been lured to the Northwest by the attractive advertising of the railroads. They had made a selection of a tract of land in the Canadian Northwest based on the statements of advertisements they had read and the representations of an immigration agent. It developed that their lands were 100 miles from a railroad. This colony of 200 or 300 people was so wholly unadapted to such pioneering that they brought along 140 pianos among them, and not a solitary agricultural implement. They started to wagon their belongings to their location. Some of them abandoned their pianos along the road. All of them were sorely discouraged and dis-

appointed, and practically every one of them deserted from time to time and went back home, breathing curses on the scheme.

"With people who can't even speak the language of the country, the situation is very much worse. Take a colony of Hollanders, for instance. In Louisiana they would be like a flock of bewildered sheep. They don't know the language; they don't know the laws; they don't know the markets, and all the physical conditions would be strange. There would be confusion, discontent and home-sickness from the

first, and desertion and denunciation in the end.

"If you scatter alien people around in such small units or groups that they will speedily learn the language, the laws and the customs, and thus become assimilated, then the immigrant is an advantage to the country and he will be benefited himself. But from my 30 years' experience I am convinced that all attempts to colonize non-English-speaking people on raw lands in this day and generation will prove harmful to every interest involved."

ALBERT PHENIX.

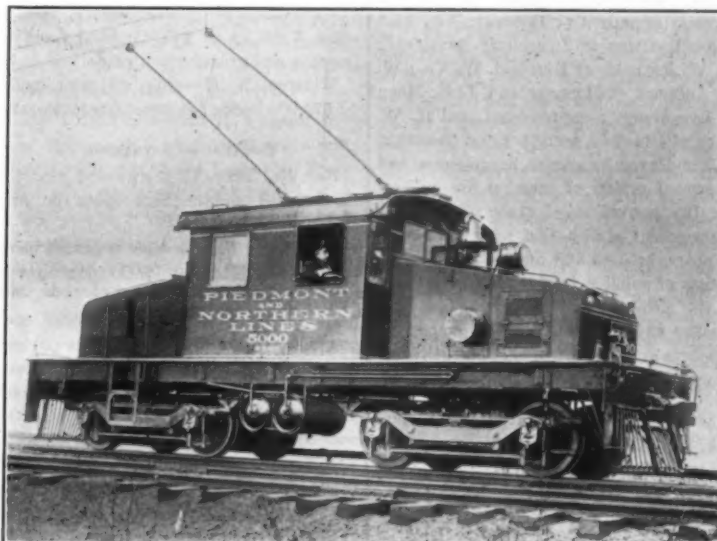
## Piedmont and Northern.

### POWERFUL FREIGHT LOCOMOTIVES FOR HIGH-SPEED CAROLINA INTERURBAN.

The Piedmont & Northern Lines, as the extensive trolley system which J. B. Duke and other capitalists are building in the Carolinas will be known, which has just begun operation with electric passenger cars on 11 miles of railway between Charlotte and Mt. Holly, N. C., has had built by the Westinghouse Company and the Baldwin Locomotive Works some superior electric locomotives for freight service, of one of which the accompanying illustration is an excellent picture.

The road in North Carolina is known as

Baldwin Locomotive Works mechanical parts, in which are concentrated 80 years of locomotive building experience, are used in these locomotives. For the Piedmont locomotives the cabs are of sheet steel and are centrally located, which permits an unobstructed view in nearly all directions. The trucks are of the equalized pedestal type, have rigid bolsters and rolled steel wheels. The Westinghouse EL brakes are inside hung, and arranged for either hand or air operation. The frame is built with steel-plate bumpers. The



the Piedmont Traction Co., and in South Carolina as the Greenville, Spartanburg & Anderson Electric Railway. Together they will be known as the Piedmont & Northern. It is expected that cars will be operating from Charlotte as far as Gastonia within a week or two. Rapid progress is also being made on the South Carolina end between Greenville and Greenwood, which stretch of line will soon be done, and work is also progressing from Greenville to Spartanburg, whence it will be continued to Gastonia. Altogether the system will form a complete and speedy means of communication between a number of manufacturing centers. At present eight passenger trains each way per day are being run between Charlotte and Mt. Holly, and a letter from Charlotte says that they are being liberally patronized.

The company will erect at Pinola a brick car shed 200 feet long and 60 feet wide. It will have a tiled roof. A freight yard will also be established there. Headquarters are at Charlotte.

Six Baldwin-Westinghouse locomotives of the type illustrated were purchased. All are to be used in freight service, one by the Piedmont Traction Co. and the others by the Greenville, Spartanburg & Anderson Railway. Each locomotive is equipped with four Westinghouse interpole No. 308-B5 motors and Westinghouse HL control.

four longitudinal sills are 12-inch steel channels.

Forced ventilation is used for the motors, which have a one hour normal rating of 185 horse-power at 750 volts and a continuous rating, with forced ventilation, of 135 horse-power. Inasmuch as the locomotives are intended only for slow speed freight work, a gear ratio of 16 to 57 is used. Because of the characteristics of the motors the locomotives can start and haul heavy loads with relatively small draught of current from the substations.

The principal dimensions of the locomotives are as follows: Gauge, 4 feet 8½ inches; wheel base, rigid, 7 feet 4 inches; total, 25 feet; distance between truck centers, 17 feet 8 inches; driving wheels, diameter, 3 feet 1 inch; journals, 5x9 inches; width, 10 feet; height over all, 13 feet; length between coupler knuckles, 34 feet 10 inches; weight complete, 110,000 pounds;

One of these engines can haul 40 cars weighing 45 tons with load at a speed of 20.5 miles per hour at 750 volts current, this being on straight level road. On a grade of .5 per cent., 15 cars; 1 per cent., 9 cars; 2 per cent., 5 cars.

In common with the other modern Westinghouse railway motors, those used on the Piedmont cars and locomotives have the following important features which have made Westinghouse railway motors



famous: 1. Sparkless commutation under all loads and voltages encountered in service. 2. Oily waste lubrication, separate gauging oil reservoir, filtered oil. 3. Two turn strap wound armature coils. 4. Spider armature construction. 5. Bolted commutator. 6. Strap wound field coils. 7. Spring packed field coils. 8. Thoroughly insulated and accessible brush-holders of superior type. 9. Gear case suspension of proven superiority. 10. Axle caps and axle bearing dust guards.

### Machinery for South America.

Juan San German, Socorro, Colombia, writes to the MANUFACTURERS RECORD:

"I take the liberty of requesting you to put me in communication with factories making the following goods: Stripping machinery (desfibradores), machines for making cigars and cigarettes, iron bridges, steel tramways for mines, cement, sugar, coffee and rice mill equipments, installations for milling grain, and especially wheat. As we are, unfortunately, lacking in improved facilities of transportation, the machinery ought to be forwarded in parts, in size convenient for carriage by mules. The capacity of the apparatus must not be very great, for manufacturing is done here in a rather small way."

### Merchandise Brokers' Association.

The Merchandise Brokers' Association, recently organized at Roanoke, Va., with John T. Owen of Lynchburg, president; M. W. Reynolds of Bluefield, W. Va.; W. L. Andrews of Roanoke and J. S. Moon of Lynchburg, vice-presidents, and R. W. Lacy of Bluefield, secretary and treasurer, will endeavor to secure harmonious and concerted action of merchandise brokers for the correction of trade abuses, discouragement of dishonest practices among shippers, brokers and buyers, the dissemination of reliable information of interest to its members and the promotion of a broader and friendlier interest among its members and between them and their customers.

At the triple joint convention at Norfolk, Va., May 13-15 of the American Supply and Machinery Manufacturers' Association, the National Supply and Machinery Dealers' Association and the Southern Supply and Machinery Dealers' Association, the program will include papers on motion study, by Mr. Charles S. Miller, Miller, Franklin & Co., New York, N. Y.; the national banking and currency problem, by Mr. John Perrin, member National Monetary Commission, Indianapolis, Ind., and Mr. James A. Fulton, secretary American Monetary League, McKeesport, Pa.; American merchant marine, by Mr. James L. Ewell, Merchant Marine Committee of 100, New York, N. Y., and Mr. Samuel H. Barker, Philadelphia, Pa.

Mr. Edward J. Troy, who has been unanimously elected secretary of the Chamber of Commerce and Business League of Mobile, Ala., recently organized with Mr. John T. Cochrane president, has had wide experience as secretary of the Missouri Manufacturers' Association, the St. Louis Manufacturers' Association, the Missouri Immigration Association and other organizations.

It is estimated that from 8000 acres of land at Hastings, Elkton and other points in the Irish-potato belt of St. Johns county, Florida, more than \$1,000,000 worth of potatoes will be marketed this year.

Turpentine operators of Georgia will meet at Waycross April 23 to perfect a State organization.

## GOOD ROADS

### WEEK'S HIGHWAY RECORD.

#### Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

#### Bonds Voted.

Cedartown, Ga.—City voted \$20,000 bonds for street paving.  
Columbia, Mo.—Boone county voted \$20,000 bonds for road construction.  
Eutaw, Ala.—Greene county voted \$125,000 bonds for road improvement.  
Jackson, Miss.—City will issue \$90,000 bonds for street paving.  
San Benito, Tex.—City voted \$18,000 bonds for street improvements.

#### Bonds to Be Voted.

Bastrop, Tex.—Bastrop county votes May 14 on \$80,000 bonds for road construction.  
Greenville, S. C.—City votes May 7 on \$115,000 bonds to pave streets and sidewalks.  
Kerrville, Tex.—City votes April 23 on \$20,000 bonds to grade, gravel and repair streets and sidewalks.  
Oxford, Miss.—Lafayette county votes May 4 on \$100,000 bond issue to construct roads.  
Wellsville, Mo.—Montgomery county votes April 24 on \$45,000 bond issue to improve and gravel seven roads.  
Winston, N. C.—City will vote again on \$75,000 bonds for street improvements.

#### Contracts Awarded.

Beeville, Tex.—City awarded contract for 30,000 square feet sidewalk and curbing.  
Charlotte, N. C.—City awarded contract at \$51,733.44 for 34,000 square yards cement sidewalks.  
Charlotte, N. C.—City awarded contracts for 161,000 yards of street paving.  
Fort Pierce, Fla.—St. Lucie county awarded contract at \$176,034 for 117,000 yards grading, 9200 cubic yards shell in road, 10,000 cubic yards marl in road, 12,875 yards marl and shell, 24,000 cubic yards rock; contract for 100,000 cubic yards embankment let to same contractor at \$15,000.  
Lewisville, Tex.—Denton county awarded contract to construct rock-macadam and gravel roads.  
Mobile, Ala.—Mobile county awarded contract to surface road, involving 76,986 tons screened gravel and 22,981 tons chert; amount available \$500,000.

#### Contracts to Be Awarded.

Baltimore, Md.—City will pave Mason and Jenkins alleys; contract No. 19, vitrified block, 880 square yards; concrete curb, 600 linear feet; grading, 180 cubic yards.  
Calera, Ala.—Shelby county opens bids June 3 for constructing five miles chert road; cost \$8000.  
Carrollton, Ala.—Pickens county will construct four miles sand-clay road; cost \$8000.  
Columbia, Mo.—Boone county has \$100,000 available for gravel road construction.  
Fort Worth, Tex.—City will pave Houston street; 17,671 square yards pavement and 5490 linear feet gutter.  
Hanover, Va.—Hanover county will construct one and one-quarter miles gravel road.  
Morristown, Tenn.—City will construct about one mile paving.  
Opelika, Ala.—Lee county appropriated \$4000 toward construction of model State highway.  
Paris, Tex.—Lamar county receives bids

until May 21 to construct 40 to 48 miles of rock roads.

Portsmouth, Va.—City will pave 30,000 square yards of roadway in Seventh ward.  
Raleigh, N. C.—Wake county receives bids until May 6 for constructing one mile of macadam road with binder.

Statesville, N. C.—City will pave portions of Center and Broad streets; each 100 feet wide.

### Good Roads for Kingsville.

Commercial Club,  
Kingsville, Tex., April 9.

#### Editor Manufacturers Record:

Nueces county has taken the first step toward having permanent and improved public highways, the Frisco good roads train having just finished its trip through this section and having appointed committees at every community. These committees were called together at Kingsville by the Kingsville Commercial Club, and there formed the Nueces County Good Roads Association with W. H. McCracken and B. F. Johnson of Kingsville as president and secretary, respectively. The following vice-presidents were elected: W. H. Beck, Kingsville; C. C. Brendle, Robstown; F. E. Ring, Calallen; V. Bluntzer and E. P. Scott, Corpus Christi; J. B. Butts, Bishop; W. T. Full, Rivera; B. L. Hoffman, Ricardo; M. E. Stockton, Laurels Ranch; Burr Westbrook, Driscoll; Mr. Walcott, Aguadulce; John Bluntzer, Bluntzer; B. A. Bennett, Manquette. In addition to these names, Messrs. C. C. Wentz and J. T. Bartlett, Bishop; W. T. Thompson, W. W. Wright and Mrs. Grace Mitchell, Robstown; Wm. Young, George Hoffman, Kingsville; A. A. Kimmell, C. M. Sheppard, Riviera; Peter Bartleson, Charles T. Patterson, Ricardo, regularly appointed delegates, were in attendance.

A number of the business men and farmers of Kingsville were present and heard the discussions. Resolutions were adopted which commit the organization to the work of obtaining about 60 miles of public permanent highway, touching the more important towns and communities in Nueces county, and pledging the association to a bond issue sufficiently large to build these roads. Bishop was chosen as the place of the next meeting, which will be called by the president to hear the report of the Government engineer, who will be employed to at once make a detailed plan of the work.

B. F. JOHNSON, Secretary.

### To Build Big Mills.

The Asheville (N. C.) Timber Co. will build at Black Mountain or Asheville a band-saw mill with a daily capacity of 50,000 feet of hardwood lumber and a stove mill with a daily capacity of 60,000 slack-barrel staves. The mill buildings will be of wood mill construction, and the machinery is estimated to cost \$20,000. This company will develop 12,238 acres of Yancey county timber land, obtaining transportation via the railway being constructed by Dickey & Campbell of Black Mountain.

### Southern Engineering Society.

The architects and engineers of Augusta, Ga., have formed into a society known as the Southern Engineering Society, the enrollment amounting to about 50 members. It is the purpose of this society to have lectures, papers, etc., pertaining to all classes of engineering, and to derive some benefit in the engineering profession. T. M. Campbell is secretary.

The Tennessee Copper Co. at its Copper Hill works in 1911 treated 436,285 tons of ore, yielding 13,808,940 pounds of copper from its own mines, and 34,768 tons of custom ore.

## RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### A KENTUCKY INTERURBAN.

Indianapolis Construction Co. Building from Glasgow to Hodgenville.

E. F. Wheaton, general manager of the Indianapolis Construction Co., 421 Hume-Mansur Building, Indianapolis, Ind., advises that it is a new corporation under date of April 15, and it has organized and is financing and preparing to build 47 miles of standard gauge freight and passenger electric railway to connect Glasgow and Hodgenville, Ky. It is also handling the development of a number of interurban electric railway and power plans in the South, including the Mississippi Central Traction Co. of Mississippi and the Charleston & St. Louis Traction & Power Co. of Missouri, besides others.

Mr. Wheaton also says that the American Traction & Power Co. of Wilmington, Del., which formerly maintained offices at Indianapolis, besides Paducah and Henderson, Ky., has withdrawn from the Northern field and the Indianapolis Construction Co. has succeeded it and will handle all of the former business north of Atlanta and west of Cincinnati.

The officers of the new company are Cassius C. Hadley, president, Indianapolis; John E. Patton, vice-president, Chicago; James H. Costello, secretary and treasurer, and E. F. Wheaton, general manager, both of Indianapolis. The latter was formerly vice-president of the American Traction & Power Co., but has resigned from that position.

### ATLANTA-MACON ELECTRIC.

New Company Applies for Charter to Build Interurban Long Projected.

The Atlanta & Macon Railway Co., which proposes to build the long-talked-of interurban electric railway from Atlanta to Macon, Ga., 95 miles, has applied for a charter. The route is via Griffin, Jonesboro, Forest, Hampton, Lovejoy, Forsyth and Sunnyside. The capital stock is \$100,000. The incorporators are Kennett Cowan, W. J. Sheahan and Sellar Bulard of Chicago, C. G. Young and Howard R. Stewart of New York, Hollins N. Randolph, Hugh M. Scott and Robert S. Parker of Atlanta; W. J. Massee of Macon, and Seaton Grantland and W. J. Kincaid of Griffin, Ga.

Mr. Randolph is quoted in a report from Atlanta as saying that the company has no announcement to make at present beyond the statement that matured plans are being considered for the construction and operation of an interurban railway from Atlanta to Macon. If encouragement is received in the work of obtaining the necessary franchises and other necessary legal preliminaries the company will proceed toward the fulfillment of its plans. It is said that power will be purchased from the Central of Georgia Power Co.

### CLINCHFIELD'S EXTENSION.

While Report Is Premature, Line Is Expected to Build on to Elkhorn City.

President Mark W. Potter of the Carolina, Clinchfield & Ohio Railway, 24 Broad street, New York, informs the MANUFACTURERS RECORD that the report recently published there to the effect that the company would build an extension from Dante, Va., to Elkhorn City, Ky., is premature.

With reference to this it may be said that the Clinchfield road has long contemplated the building of this extension. It is about 40 miles between the two points,

but the way is through a most difficult country, and would necessitate some of the heaviest construction work. It is said that several routes have been surveyed, and that construction would cost at least \$5,000,000 to make such a road as would have satisfactory grades.

That the extension will be built seems assured. Considerable traffic is promised, and it is expected that the necessary financial arrangements will be duly concluded.

### FRISCO SELLS BONDS.

**After Paying Off Notes It Will Have Several Millions for Improvements.**

It is announced in New York that the Frisco system has sold to William Salomon & Co. and G. H. Walker \$12,300,000 of 5 per cent. first mortgage bonds of its New Orleans, Texas & Mexican division, and after using the bulk of the proceeds to pay off \$8,000,000 of 5 per cent. three-year notes—called for payment on June 1 of this year, although not due until March next—will use the remainder for improvements. It is further stated that the bonds are part of an authorized total of \$50,000,000, of which \$16,000,000 was recently sold to investors, and this new sale brings the total issued up to \$28,300,000. The earnings of the Frisco are said to have increased in the last two years from \$3700 per mile to \$5200.

### United Railways of Baltimore.

The annual report of the United Railways & Electric Co. of Baltimore, which covers the fiscal year ended December 31, 1911, is a gratifying exhibit of progress and enterprise. President Wm. A. House reports to the board of stockholders that the gross earnings were \$8,025,758, an increase of \$337,863 over 1910, or 4.39 per cent.; operating expenses, including insurance, \$3,681,093, increase \$79,197, or 2.20 per cent.; net earnings were \$4,344,664; total net income, \$4,347,304; balance after payment of fixed charges, including taxes, interest, rentals, etc., \$1,487,618. Then, after setting aside \$60,000 for the sinking fund of the Maryland Electric Railway's bonds, crediting \$450,944 to extraordinary expenditures and paying \$560,000 in interest on income bonds and dividend on preferred stock, there was left a surplus to the credit of profit and loss amounting to \$416,674. The percentage of operating expenses to gross earnings was 45.87 per cent., a decrease of practically 1 per cent. as compared with 1910.

Traffic statistics reveal the large business of the company thus: Car miles run, 28,698,339, increase 786,766; revenue passengers carried 161,467,727, increase 6,538,492; transfers used 64,643,636, increase 3,853,829, about 40 per cent. of the passengers who paid fares using transfers; miles of lines operated, 403 of single track.

Since July 17 last the road has been using current furnished from the Pennsylvania Water & Power Co.'s plant on the Susquehanna River at McCall's Ferry, but the company's own extensive steam-power plant on Pratt street, in Baltimore, is kept in constant readiness for use in case of any failure to receive power from the hydro-electric source.

The total assets of the company are \$77,544,199, which includes the cost of the road, equipment and real estate at \$67,351,211.

Immediately after the publication of the report the company announced an increase of wages to its employees.

### New Equipment, Rails, Etc.

The American Locomotive Co., New York, has received an order for 15 switching locomotives from the St. Louis Terminal Railroad Association.

The Concord (N. C.) Street Railway is expected to purchase trolley cars.

The Harriman Lines will buy 9400 cars, including 5700 box, 1000 refrigerator, 700 gondola, 700 flat, 700 stock and 600 maintenance of way. Specifications are said to be prepared.

The Kanawha & Michigan Railway is reported to have ordered from the American Locomotive Co. 10 consolidation and two eight coupled double-end locomotives.

In the annual report of the United Railways of Baltimore is the statement that the company has ordered 60 cars for early delivery.

The St. Louis & Hannibal Railway has placed an order for a mogul locomotive with the Baldwin Works, Philadelphia.

The Lenoir Car Co., Lenoir, Tenn., is rebuilding 100 cars for the Cincinnati, New Orleans & Texas Pacific Railway for carrying automobiles.

The Illinois Central Railroad has ordered from the American Car & Foundry Co., St. Louis, 10 coaches, 10 compartment coaches, 20 combination coach and smoking cars, 26 baggage cars, 17 mail compartment cars, of which 10 will be 60 feet long and the others 70 feet long, besides 9 passenger and baggage cars. From the Pullman Company, Chicago, the company has also ordered 10 chair cars, 4 cafe coaches, 3 parlor cars and 1 observation car.

The Seaboard Air Line's authorized purchase of equipment is announced thus: 26 locomotives, 1200 freight cars, 25 cabooses and 30 all-steel passenger cars.

The Baltimore & Sparrows Point Railroad has ordered a six-wheel switching locomotive from the Baldwin Works.

The Atlantic Coast Line placed its order for 1900 box cars with the Mt. Vernon (Ill.) Car Co., and it also ordered 100 flat cars from the Standard Steel Car Co. of Pittsburgh.

### New Orleans Railway & Light.

The annual report of the New Orleans Railway & Light Co., which President Hugh McCloskey has made to the directors and shareholders, shows a net income of \$771,696 for 1911, which, it is said, is the largest in the history of the company. The gross earnings were \$6,652,937; operating expenses, \$3,737,123; net operating revenue, \$2,915,813; net operating income, \$2,375,282; gross income, \$2,419,440; net income, \$771,696. The increase in operating revenue was \$415,381, or 6.66 per cent.; in operating expenses \$207,438, or 5.88 per cent.; in net operating revenue \$207,943, or 7.68 per cent.; in net income \$135,804, or 21.36 per cent.

The company spent during the year for construction improvements and betterments \$670,501.

The total assets are \$68,768,029, which includes the operating property at \$65,686,420.

### Rumors of a Deal.

Negotiations are in progress, according to statements circulating in New York, for the acquisition of the Detroit, Toledo & Ironton Railroad by the Norfolk & Western Railway, the object being to gain an independent outlet from the latter to the lakes. An officer connected with the Norfolk & Western declined to discuss the rumors.

### Chesapeake Beach Railway Deal.

F. J. Lisman & Co., bankers, 30 Broad street, New York, pronounce as "premature" reports from Washington, D. C., that they have purchased the Chesapeake Beach Railway, extending from there to Chesapeake Beach, Md.

It was reported that the firm had bought the line from the estate of the late David H. Moffatt of Denver, who had the road

for a long time. W. F. Jones is president and Paul Y. Waters secretary and treasurer at Washington.

One of the rumors in connection with the subject said that the Pennsylvania Railroad was behind the deal.

The line is standard gauge, 36 miles long, and has four locomotives and 56 cars.

### A West Virginia Interurban.

The Charleston Traction Co. has been chartered in West Virginia to build a railroad from St. Albans, in the western part of Kanawha county, eastward via Charleston, Montgomery and other towns to Mt. Carbon, in Fayette county, West Virginia, about 40 miles. The capital is \$250,000. Incorporators are W. G. MacCorkle, S. B. Chilton, W. T. Moore, George E. Sutherland and S. Hess, all of Charleston, W. Va.

### \$1,000,000 for Improvements.

Concerning the recent report that the New Orleans Terminal Co. has appropriated \$1,000,000 for improvements, President A. D. Lightner writes:

"Our appropriation is for completion of docks and slips, extensions of warehouses, yard tracks and mechanical facilities. Plans not yet worked out or contracts let."

### Railroad Notes.

The election of Arthur W. Thompson, general manager of the Baltimore & Ohio Railroad, to be third vice-president in charge of operation is announced.

The Frisco, according to a report from New Orleans, will next month begin operating motor cars on the Louisiana Southern Railway or Shell Beach line.

The Ocilla Southern Railroad announces the opening of its extension from Alapaha to Nashville, Ga., 13 miles, with four stations between the terminals.

A report from Memphis says it is rumored there that the Santa Fe Railway system is planning to enter Memphis over its own rails, and that negotiations have been undertaken to acquire the Missouri & North Arkansas Railroad, which is now in a receivership.

The Gulf, Colorado & Santa Fe Railway, says a report from Galveston, has awarded a contract to H. D. McCoy of Cleburne, Tex., for the erection of a boiler shop and blacksmith shop at Temple, Tex., to cost \$5000. It will be fireproof and of brick and concrete.

A report from Savannah, Ga., says that engineers for the Seaboard Air Line are making final surveys and finishing plans for the terminal improvements proposed on Hutchinson Island, and which will cost about \$300,000. It is expected that construction will begin in about two weeks. One of the improvements is to be the erection of steel sheds over the cotton platforms.

A report from Cumberland, Md., says that Roberts & Shaffer have begun construction at the Miller Farm property (now called Millersville) on the shops and roundhouse for the Western Maryland Railway. One of the first buildings to be erected will be a huge coal tippie. The roundhouse will have stalls for 30 locomotives. Improvements will cost, it is said, about \$200,000.

The Baltimore & Ohio Railroad Co., according to reports from Grafton, W. Va., has acquired a large stock interest in the West Virginia Midland Railroad running from Palmer to Webster Springs and thence to timber lands in Webster county, and improvements and extensions are expected. John T. McGraw of Grafton is president of the West Virginia Midland, which is 36 miles long.

## TEXTILES

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

### Cotton Goods Trade.

[Special Cor. Manufacturers Record.]

Rockingham, N. C., April 12.

W. B. Cole, treasurer of the Hanna Pickett Cotton Mills here, says that the situation in the cotton manufacturing business looks brighter than it has looked in the past five years. He says:

"Cotton is cheaper now, and this has created a more steady demand for cotton goods, and hence there is a better margin of profit."

Claude Gore, treasurer of the Great Falls Manufacturing Co., says:

"In the drills, sheetings and cotton-ropes end of the cotton-mill business the situation seems better than it has been in the past three years. We are selling direct to the trade, and we find that we can come nearer than heretofore to making a living profit on these goods."

### Purchased Additional Spray Mills.

The Thread Mill Co., Monticello, Ind., has bid in the Spray Woolen Mills Co. at \$135,000, the Rhode Island Company at \$140,000 and the American Warehouse Co. at \$150,000, each plant at Spray, N. C. This purchaser was announced recently as having acquired the German-American Company at Draper, near Spray, for \$435,000, and the Lily Mills at Spray for \$50,000. The Thread Mill Co. represents the Marshall Field Company of Chicago. The five mills have a total of about 65,000 spindles and 425 looms for manufacturing cotton yarns, cotton blankets, woolen blankets, etc. The three new sales are not final until approved by the court, and it is reported that the bondholders have objected to the confirmation.

### The Cotton Movement.

In his report for April 12 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 225 days of the present season was 14,342,923 bales, an increase over the same period last year of 3,303,570 bales. The exports were 9,418,096 bales, an increase of 2,678,682 bales. The taking were, by Northern spinners, 2,005,383 bales, an increase of 137,172 bales; by Southern spinners, 2,059,636 bales, an increase of 230,991 bales.

### Planning \$500,000 Enlargement.

The Marion (N. C.) Manufacturing Co. has changed its recently announced plans and will build a larger addition than was proposed. It now intends to erect a four-story 132x150-foot addition, of mill construction, with tar and gravel roof, contract to be awarded this week. It will install 25,000 spindles, 600 looms, boilers, 42x48 Corliss engine, etc., all contracted for except the engine. J. E. Shirrine of Greenville, S. C., is the engineer in charge.

### Adding Automatic Looms.

The Darlington (S. C.) Manufacturing Co. has 1400 looms, 600 being narrow automatic looms on print cloth, and will change its old-style looms as rapidly as possible. It has taken out 200 36-inch looms, and will install 200 40-inch looms built by the Draper Company, Hopedale, Mass. The new looms will have all attachments for making fancy fabrics. J.



E. Sirrine, Greenville, S. C., has made plans for the changes.

#### To Manufacture Aseptic Cotton.

The Southern Aseptic Cotton Co., Chattanooga, has been organized with Robert T. Cameron as president and Edward E. Jenkins manager. It has installed experimental machinery and ordered equipment for a permanent plant to manufacture absorbent cotton and absorbent cotton gauze.

#### Textile Notes.

The Webster Woolen Mills Co., Grafton, W. Va., plans to increase capital.

R. J. Stough, Cornelius, N. C., is reported as planning the erection of a cotton mill.

The Barringer Manufacturing Co., Rockwell, N. C., now operating 3000 ring spindles, will add 3000 spindles.

The American Hosiery Mills, Kernersville, N. C., was destroyed by fire on April 15, the loss being estimated at \$100,000.

The Jennings Cotton Mills, Lumberton, N. C., now operating 8000 ring spindles, will add 200 spindles, with 16 cards, etc. Contract has been awarded.

The Roberta Manufacturing Co., P. M. Keller, manager, Concord, N. C., will rebuild cotton-yarn mill burned last year, the new equipment to be about 2000 spindles.

The Lillian Knitting Mill Co., Albemarle, N. C., will build a three-story 50x60-foot mill-construction addition of brick, and has awarded the contract. This is the addition mentioned last week.

The Twine Mill Corporation, Richmond, Va., will add 3000 spinning spindles, and has awarded the contract. This will increase its equipment to 7000 spindles, producing white and colored twine.

The Hope Mills (N. C.) Manufacturing Co. writes to MANUFACTURERS RECORD: "The increase in stock is to provide additional working capital and make certain plant improvements, plans for which are not yet complete." The company was mentioned last week as increasing capital stock by \$150,000.

The Mayes Manufacturing Co., Mayesworth, N. C., will install and has awarded contract for the following machinery: 10 cards, 5 speeders, 4 combers, 1 ribbon lap machine, 28 spinning frames, 8 twistlers, 5 spoolers and 2 reels. It has also begun the erection of a warehouse and operatives' cottages.

## MINING

### LEAD PRODUCTION IN 1911.

Final Figures by the United States Geological Survey.

The United States Geological Survey has just issued its annual advance statement of lead production in 1911. This statement, prepared by C. E. Siebenthal, gives the final figures of output as made up directly from reports from all lead smelters in operation during the year. Preliminary estimates of the production in 1911 of lead, zinc, copper and some other metals were published by the Survey January 2, 1912. These preliminary figures for lead are shown by comparison with the final figures to have been one-ninth of 1 per cent., or 544 tons, in excess of the actual production.

Missouri held first place in the production of lead, with an output of 182,207 short tons, and also made the greatest increase for the year, the gain over 1910 being 20,548 tons. Idaho, ranking second in production, with 117,159 tons, made also the second greatest gain, 17,235 tons. Arizona had an output of 3450 tons, as compared with 858 tons in 1910. Utah produced 55,198 tons, a falling off of about 2000 tons. Colorado, with an output of

30,621 tons, lost over 5000 tons as compared with 1910. The production of lead from African ore fell off, being 509 tons, as against 3500 in 1910. The lead of Mexican origin likewise suffered a big reduction, chiefly due to political conditions in that country. The total production of lead of foreign origin was 94,134 tons, as compared to 108,553 tons in 1910.

The total production of refined lead in the United States from both domestic and foreign ores was 486,975 tons, as compared with 470,380 tons in 1910, a gain of 16,595 tons, or 3.5 per cent. The total production, including antimonial lead, was for the first time more than half a million tons, the exact figures being 501,053 tons. Of the refined lead produced, 295,357 tons was desilverized lead, and 155,947 tons was soft lead, in addition to which there was 35,671 tons of desilverized soft lead. The gain in soft-lead production over 1910 was 22,374 tons, which compared with the total gain for the year, 16,595 tons, shows that the output of desilverized lead fell off 5779 tons. The antimonial lead production for the year was 14,078 tons, practically the same as in 1910.

One table in the statement shows the recovery of secondary lead from drosses, old metal, etc., both as pig lead and rejuvenated lead alloys. Other tables give the exports of lead as well as the imports by countries and by classes.

There is also given a list of the lead smelters and refineries, including those idle in 1911 as well as those operating or under construction. A diagram covering the period from 1906 to 1911, inclusive, shows by curves the average weekly price of lead at New York and at London. The average New York price for the year was 4.5 cents per pound, and, as shown by the curve, it was nearly stationary for the year. The London price gradually rose during the latter half of the year and reached the highest level since 1907. The result is seen in the increase in the exports of foreign lead from 78,586 tons in 1910 to 113,307 tons in 1911. This is correlated with a reduction of stocks of foreign lead in bonded warehouse from 35,972 tons in 1910 to 4481 tons at the close of 1911.

#### Coal Resources of Texas.

The United States Geological Survey's estimates of the coal areas of Texas show that the bituminous fields known to contain workable coal cover 8200 square miles, and that 5300 square miles, not so well known, may contain workable coal. The known lignite areas cover 2000 square miles, and there are 53,000 square miles, extending from Sabine and Red rivers on the east and north to the Rio Grande on the southwest, which may contain workable beds of lignite. The estimated original supply of bituminous coal in Texas is placed at 8,000,000,000 short tons, and of lignite at 23,000,000,000 tons, making a total of 31,000,000,000 tons as the original supply. From this there had been mined to the close of 1910 a total of 20,056,941 short tons, which represents an exhaustion of approximately 30,000,000 tons, the exhaustion being one-tenth of 1 per cent. of the original supply. The supply left in the ground at the close of 1910 would be equal to 19,000 times the production of that year.

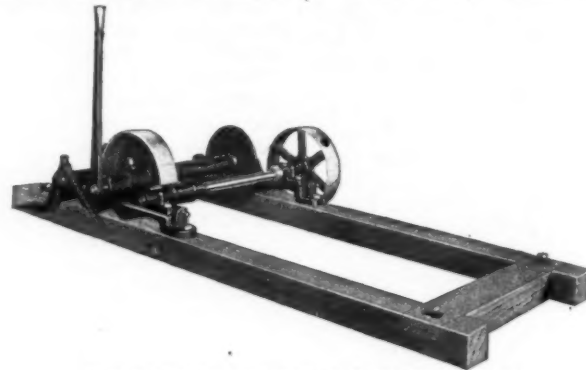
#### Will Develop 40,000 Acres.

The Knox Coal Mining Co., recently incorporated with \$1,000,000 capital stock, has organized to develop 40,000 acres of coal land at Barbourville, Ky.; F. D. Sampson, president; J. F. Bosworth, vice-president; J. C. Flournoy, secretary-treasurer. This company will soon open bids for machinery, and proposals are to be sent to Barbourville. Its main offices are at Louisville.

## MECHANICAL

### The "Reliable Erie" Portable Friction Hoist.

Among the products of the Erie Clutch & Pulley Co., Erie, Pa., an important piece of equipment of wide utility is the "Reliable Erie" portable friction hoist, shown in the accompanying illustration. This hoist is designed to meet the requirements of the farmer who wants a staunch, durable hoist that can be depended upon, having ample brakes and a frame large enough to accommodate a gas engine. It is built for



"RELIABLE ERIE" PORTABLE FRICTION HOIST.

general use, and can be taken anywhere, as it is easily transported. It is valuable for use in filling silos, in granaries, for hoisting hay, in storage houses, warehouses, etc. It is extensively used by contractors for hoisting material in buildings under construction; also for operating conveyors and for hauling and pulling for short distances. It is claimed by the company that the outfit will pay for itself in a short time in labor saved, especially since help is usually scarce and hard to secure. It makes the tasks around the farm easier, and gives the farmer more time for other things. It is simple, compact, reliable, easily operated and easy to move, and is noiseless.

The hoisting drum is three inches in diameter by 18 inches long, and is fitted with two oil cups. A hole is drilled through the flange on the friction side, through which the rope or cable is passed and fastened to keep the end of the rope from leaving the drum. The friction wheels are made of special material and are said to have great wear-resisting qualities. The pulley ordinarily furnished is 14

pulled backwards, applies the brake; when held between the friction and the brake, the drum is free on the shaft and the rope will drop back or may be pulled back. In addition to this brake, an emergency brake, applied by the foot lever shown in the illustration, is operated independently of the other, so that both can be used, either together or separately.

In addition to the uses already noted, this friction hoist is adapted to elevators, grain loading, bridge building, handling of cement and coal, well digging, hauling logs, handling concrete and mortar, for use around docks, in machine shops, ice-

houses, bakeries, wholesale houses, flour and grist mills, etc.

The company was established in 1873, so that it now has a record of 38 years upon which its reliability for materials and workmanship is based.

#### Thor Roller-Bearing Drills.

The accompanying illustration shows the Thor roller-bearing piston air drill, which is one of a new line of portable drilling machines recently placed on the market by the Independent Pneumatic Tool Co., Thor Building, Chicago. These drills possess the same general features used in former types of Thor drills, such as Corliss valves, telescopic screw feed, removable crank chamber plate and large air chamber. The size of the spindle in most cases has been increased, but the most radical improvement is in the crankshaft bearing, connecting rods, eccentrics and eccentric straps. The crankshaft has been greatly strengthened, and anti-friction roller bearings are provided. The rollers are of ample length and diameter, and are retained in a machined brass cage. The



THOR ROLLER-BEARING PISTON DRILL.

inches in diameter, but any size of pulley required will be supplied. The frame is 32 inches wide and 84 inches long, of long leaf yellow pine. Provision is made for taking up wear on the bearings, which are babbitted.

It will hoist 600 pounds at a rate of 50 feet per minute with pulley running 300 revolutions per minute, or 75 feet per minute with pulley running 400 revolutions. This speed can be changed to suit requirements by changing the speed of the pulley or using a larger or smaller pulley. In operating, the large hand lever, shown in the cut, when pulled forward toward the small friction wheel raises the load; when

bushings are made for a slip-fit into the casing, and are hardened and ground. The crankshaft has rounded ends, and the end-thrust is against a hardened plate, which considerably reduces the friction.

On account of the increased size of the crankshaft and the ample size of the roller bearing, the center bearing is dispensed with. The eccentric is smaller in diameter, and, being mounted on the crankshaft, still further reduces friction. The toggle and connecting rod used in former types has been replaced with a one-piece connecting rod similar to that used in the Thor close-corner drills.

Roller bearings are also provided for

the idler or planet gears in the compound drills, and an improved shifter mechanism is used on all two-speed machines.

The roller bearing on each end of the crankshaft and the one-piece connecting rod are shown in the illustration.

These tools and many others are fully described in catalogue No. 9, recently published by this company. It can be obtained by addressing the Independent

tinuous track for the cars. These rocker saddles have a certain amount of sliding motion in the direction of the cables, so that the strain is distributed and not localized. The use of this system eliminates bridging, grading, tunneling and trestle work. The cars run from the cable track to the T-rail track connections, and vice versa, automatically as desired.

The cars are made in different sizes and

ally grips the hauling cable at the starting point and releases it at the terminal or any other point desired.

The capacity of this road depends upon the size of the cables and number of cars. The road constructed to carry cars hauling 250 pounds is about 15 tons per hour, and the maximum capacity of a road using cars of 4000 pounds capacity is 350 tons per hour when equipped with a sufficient number of cars.

The amount of power required depends upon the altitude of the loading and discharging points, the length of the road and the amount of tonnage hauled. In any event, the power required is small in proportion to the amount of material handled.

All wear on both cables and wheels has been reduced to such a low minimum that the maintenance cost of this system is small. The car wheels which run on the track cable are raised off the cable in passing over the saddles, thus preventing hammering and damaging the track cable.

The advantages of the International Cable Railway Co.'s system are apparent to those interested in short haul transport-

Rosslyn Brick Co., Rosslyn, Va., near Washington. The cable is 1100 feet long and 500 feet additional track is laid on the grounds of the company. Twelve cars of 4000 pounds each are used. These cars may be run 200 feet apart, but it is found that in practice it is not necessary to run them nearer than 600 feet apart. They are used to haul clay from the beds to an altitude of 35 feet, where it is dumped into the mill. This system replaced 24 teams, and has actually more than paid for itself since it was installed, March 1, 1911. The company's address is the International Cable Railway Co., Keyser Building, Baltimore, Md.

#### The Lohmann Protective Coating for Metals.

The process of manufacturing Lohmannized metal sheets as carried on by the Brier Hill Steel Co., Youngstown, O., is attracting attention in the metal industries and in construction works. This process is used in producing plate constructions similar to those in which galvanized or Shearardized metals are used. The inventors claim that the penetration of the protecting alloy extends below the surface of the metal being treated and fills completely every pore and cavity. This claim has been demonstrated by the mechanical department of the Erie Railroad Co., the New York, Susquehanna & Western Railroad, the New Jersey & New York Railroad and the Chicago & Erie Railroad. In the Lohmann process the order of treatment of metal sheets is as follows: First—Pickle the plate in a bath of sulphuric acid to remove rust and scale. Second—Dip the material to be treated in the Lohmann bath containing an amalgamating salt. Third—Dry the plate. Fourth—Dip it in a molten protective alloy which has a temperature of 950 to 1000 degrees Fahr. Fifth—Remove the surplus coating.

The second operation in the Lohmannizing process is a special treatment to prepare the surfaces of pores and cavities for adhesion and permeation of the protective metal.

The pickling by sulphuric acid thus removing rust and scale, prepares the metal for this Lohmann bath, which, being composed of acid and an amalgamating salt, further cleanses the pores and cavities and deposits the scale upon all metallic surfaces. Upon removing from the Lohmann bath the treated material is dried and then immersed in the molten protective alloy, when an amalgam is formed by combination of the amalgamating salt and the protective alloy. The treated metal is gradually raised in temperature by the molten alloy, which has a temperature of 950 to 1000 degrees Fahr., and when the treated metal reaches a temperature of 500 degrees Fahr. the amalgam is broken and the amalgamating element volatilizes, is released, comes to and passes from the surface of the molten alloy. In its passage from the surface of the treated metal to the atmosphere the following important results are obtained. The complete surface of the treated metal, including pores and cavities, is left free from all oxidizing agents, as the amalgamating salt joins the protective alloy, forming an amalgam. The salt volatilizing leaves spaces into which the protective alloy flows, and inasmuch as the complete surface is clean, the alloy adheres thereto. Further, the oxygen present in the pores and cavities and on the surface, having a greater affinity for the amalgamating element than for the metal or alloy, passes to the atmosphere, thus taking from the bath the minimum natural oxidizing agent. This prevents oxidation from taking place and forcing the protective coating away.



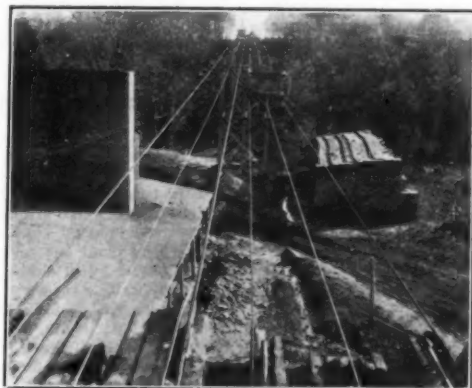
T-RAIL APPROACH TO CABLE RAILWAY.

Pneumatic Drill Co. at Chicago, New York, Atlanta, Pittsburgh or San Francisco.

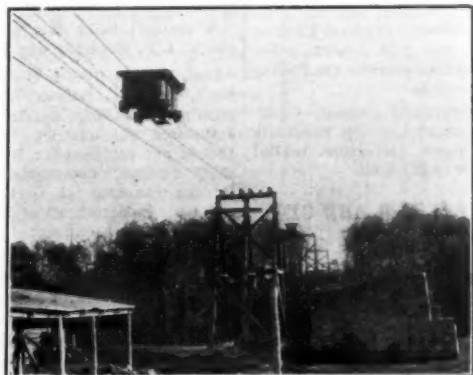
#### The International Cable Railway System.

A new system of transportation for short hauls for ore, clay, coal, sand, gravel, stone, lumber, logs, sugar-cane, fruit of all kinds, or any other material to be transported, has been designed and thoroughly tested, and is now used in industrial plants. This system is known as the International Cable Railway Co.'s Automatic Aerial Cable Railway System.

As shown in the accompanying illustrations, this system consists of cables stretched parallel to each other on top of



AERIAL RAILWAY 1100 FEET LONG.



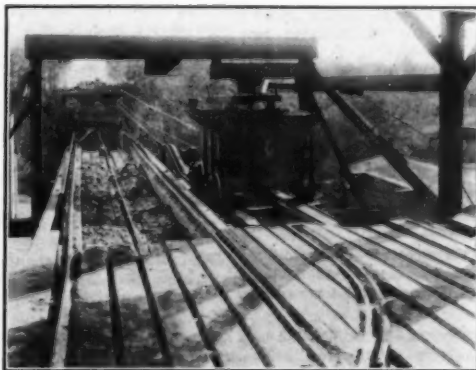
LOADED CAR ON AERIAL RAILWAY.

supports in the form of double tracks, and the cars run on top of these cables. The cars are propelled by means of an endless, crucible steel, hemp core hauling cable. An important feature of these cables is that they are always parallel with each other, so that the car remains level; also the strain on the cables is uniform. These conditions are brought about by means of an automatic patented anchor contrivance, which permits the cables to yield, or settle, under the weight of the car in equal amounts. This contrivance gives this system its great advantage over fixed cables, in which the yielding principle is not involved.

The hauling cable is propelled by double drums, which are operated by either steam, electricity or any other power available. It can be connected up to any power plant previously installed by means of a belt or friction pulley. The hauling cable rests on top of the supports between the tracks on idler wheels. The track cables are fastened on top of the supports by means of iron rocker saddles, which give a con-

designs from 250 pounds up to 4000 pounds, but a road can be built to carry even larger cars. The cars are constructed to dump automatically either from the side, end or bottom. They are equipped with combination wheels which run on the cable and also on T rails. Each car is equipped with a clutch which automatic-

tation problems. Among the advantages are the elimination of grading and tunneling in hilly locations; crossing streams of water without expensive bridging; for delivering material at an elevation, eliminating costly trestling; where deep snows are prevalent this system can be built sufficiently high to be operated above the snow line; where the ground is swampy or subject to overflow it can be constructed and operated without interruption; rights of way can be procured at a minimum cost, as the only obstructions are supports 150 feet apart, which will not interfere with fences, crops, live-stock, etc.; where it is necessary to construct long and expensive wharves from shore to deep water this



APPROACH TO DUMP AT MILL.

system can be constructed at about the same cost as over level ground; cost of renewals are almost negligible in proportion to the tonnage hauled; it is automatic in operation; where fills are to be made in grading this system eliminates all false work.

This system has been installed by the



# Construction Department

## TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "it is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

### BRIDGES, CULVERTS, VIADUCTS

Md., Baltimore.—Western Maryland Railroad, H. R. Pratt, chief engineer, Hillen Station, will expend \$400,000 for bridge improvements; replace all wooden structures with steel on concrete foundations.

Md., Easton.—Walter W. Crosby, State Engineer, Johns Hopkins University, Howard and Monument Sts., made surveys and is preparing plans for bridge over Miles River; concrete; eight spans of 100 feet each, with piers at junctions; double draw in center, each draw operating on pivots on central pier; draws of steel structural type. (Talbot county recently petitioned Legislature for authority to issue \$30,000 to \$40,000 of bonds.)

Mo., St. Louis.—City is considering construction of concrete viaduct at Union Ave.; cost \$200,000. Address Board of Public Improvements.

N. C., North Wilkesboro.—Town contemplates constructing 125-foot single-track steel bridge supported on steel columns; W. A. Bullis, Town Clerk. (See "Machinery Wanted.")

Okl., Oklahoma City.—Winnipeg, Salina & Gulf Railway Co., H. Lee Miller, president, Salina, Kans., will construct five steel bridges averaging 300 feet long.

Tenn., Benton.—James H. Williams, County Judge and chairman County Court, Box 163, states plans for recently-noted bridge across Ocoee River will be submitted to July term County Court; estimated cost within \$15,000.

S. C., Greenville.—Greenville county will construct three steel bridges; contract to be awarded April 29; J. P. Goodwin, Supervisor. (See "Machinery Wanted.")

Tex., Dallas.—City Commissioners, Dallas Terminal Railway and street railways awarded contract to B. T. Davis and C. M. Davis at \$6850 to construct concrete bridge. (Recently mentioned.)

Tex., El Paso.—El Paso county voted \$7000 bond issue to construct bridges at Montoya and Vinton, Tex. Address County Commissioners.

Tex., Kaufman.—Kaufman county will construct reinforced concrete bridges; bids invited; T. S. Bond, County Judge. (See "Machinery Wanted.")

Tex., Paris.—Precinct 1, Lamar county, will construct bridges and 40 to 45 miles of rock roads; bids received until May 21; M. Hannah, engineer; W. F. Gill, secretary Road Commissioners. (See "Machinery Wanted.")

Tex., Port Arthur.—Directors of Pleasure Pier awarded contract to Spence-Howe Construction Co. of Port Arthur at \$29,300 to build drawbridge of bascule type across Sabine-Neches Canal.

Va., Chesterfield.—W. W. LaPrade, County Engineer, invites bids to construct two bridges; 50-foot span with 200 feet of trestle, 10 feet high, on concrete pedestals; 56-foot span, 86 feet trestle, 10 feet high, on concrete pedestals; roadways on both 12 feet wide with capacity of 10-ton roller; superstructure of steel, with 2½-inch oak flooring; substructure of concrete.

W. Va., Kenova.—Norfolk & Western Railway Co., C. S. Churchill, C. E., Roanoke, Va., will reconstruct superstructure of bridge across Ohio River at Kenova.

### CANNING AND PACKING PLANTS

Ala., Fairhope.—William Gomm and G. W. Clifton will establish cannery.

Ark., Forrest City.—I. T. Miller is interested in organizing company to establish cannery.

Miss., Biloxi.—Bourdon-Castanera Packing Co., F. B. Castanera, president (recently noted incorporated with \$20,000 capital stock), will establish canning plant for sea foods and vegetables; building erected by day's work; operation by August 1. (See "Machinery Wanted.")

Okl., Yale.—W. E. & G. W. Canfield have purchased canning factory; will remodel, erect addition and install machinery.

W. Va., Parkersburg.—Imperial Canning Co., capital stock \$15,000, incorporated; Jas. S. McCluer, president-treasurer; H. E. Dawson, manager; erect reinforced concrete and cement-block building; two stories; 40x190 feet; construction by company; daily capacity, 25,000 cans of tomatoes. (See "Machinery Wanted.")

### CLAYWORKING PLANTS

Ala., Paint Rock.—Bricks, etc.—A. L. Sutton and associates will organize company to manufacture bricks and tile. (See "Machinery Wanted.")

N. C., Charlotte.—Bricks.—Gaston Brick Co., capital stock \$25,000, incorporated by B. F. Withers of Charlotte, G. D. Jenkins, R. G. Rhyne and others of Mount Holly, N. C.

N. C., Monroe.—Bricks.—Shute Brick Co., capital stock \$2000, incorporated by J. T. Shute, C. W. Shute and J. E. Shute.

Okl., Henryetta.—Brick and Tile.—Henryetta Brick & Tile Co., capital stock \$15,000, incorporated by T. V. Dollins, J. H. Anderson, Jr., and Neal Allen.

Tex., Denton.—Terra-cotta.—Otto Rollin, St. Louis, Mo., contemplates establishing plant to manufacture ornamental terra-cotta for buildings.

Tex., Kingsville.—Bricks.—E. S. Wood, Austin, Tex., contemplates establishing brick plant; daily capacity 20,000 bricks.

### COAL MINES AND COKE OVENS

Ky., Barbourville.—Knox Coal Mining Co., Paul Jones Bldg., Louisville, Ky. (recently noted incorporated with \$1,000,000 capital stock), will develop 40,000 acres; soon open bids for mining machinery; F. D. Sampson, president; J. F. Bosworth, vice-president; J. C. Flournoy, secretary-treasurer; address machinery proposals to company at Barbourville. (See "Machinery Wanted.")

Ky., Pine Hill.—Kentucky Portland Cement

& Coal Co., 1025 Munsey Bldg., Baltimore, Md., will develop 1200 acres coal land for daily capacity 500 tons coal; cement plant and coal mine equipment to cost \$900,000. (See "Concrete and Cement Plants.")

Md., Lonaconing.—Louis Stanton, Frostburg, Md., purchased for \$20,000 property of George's Creek Coal Basin Co.; will open new mine.

Okl., McAlester.—Phoenix Coal Co. (recently noted incorporated with \$30,000 capital stock) will develop 160 acres; W. E. Haley, president; R. N. McMillen, vice-president; Kent V. Gay, secretary-treasurer.

Va., Coeburn.—H. F. Whitehead, general superintendent, contemplates various improvements at coal mines, doubling capacity; proposes equipping mines with new motors, erecting steel tipples near Sexton and Thelma and building dwellings.

West Virginia.—J. W. Cook, Ben Avon, Pittsburgh, Pa., acquired 4300 acres of coal land and some timber tracts in West Virginia.

W. Va., Braxton County.—J. W. Montgomery, Pittsburgh, Pa., acquired 1000 acres of coal land in Braxton county.

W. Va., Mason.—Superior Coal, Salt & Chemical Co. incorporated by L. C. Somerville, Point Pleasant, W. Va., and others. (See "Mining.")

### CONCRETE AND CEMENT PLANTS

Ky., Pine Hill.—Portland Cement.—Kentucky Portland Cement & Coal Co. incorporated with \$1,200,000 common stock and \$1,200,000 bonds; will build plant with daily capacity 2000 barrels Portland cement; develop 1200 acres land for daily capacity 500 tons coal; cement plant and coal mine equipment to cost \$900,000; coal mining equipment contract practically awarded; president, Emery M. Newton, 1025 Munsey Bldg.; vice-president, Robert S. Maslin, 200 Maryland Trust Bldg.; treasurer Harry J. Matthews, Fleet and Albemarle Sts.; secretary, Wm. L. Hawthorn, 1025 Munsey Bldg.; engineer in charge and general superintendent of construction, John W. Dreisbach, 1025 Munsey Bldg.; all of Baltimore, Md.; company's main office at 1025 Munsey Bldg., Baltimore, Md., where all mail should be addressed. (Federal Finance & Construction Co., Emery M. Newton, president, previously reported organized to finance Portland cement plant.)

Mo., St. Louis.—Portland Cement.—Continental Portland Cement Co., 1305 Syndicate Trust Bldg., proposes increasing capital stock from \$3,500,000 to \$4,700,000.

### COTTON COMPRESSES AND GINS

Ark., Hardy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust Bldg., Memphis, Tenn. (previously noted organized with \$100,000 capital stock), will operate cotton gin, etc. (See "Land Development.")

Ga., Millen.—Atlantic Compress Co. will build cotton compress; 2000 tons capacity; 4000 to 5000 bales storage capacity.

N. C., Chocowinity.—Beaufort County Union Milling & Ginning Co., capital stock \$125,000, incorporated by J. N. Hill, Milton Hill, C. R. Elks and others.

S. C., Bishopville.—Palmetto Oil Co. will rebuild cotton gin burned at loss of \$6000.

Tex., Georgetown.—Henry Lundblad, Claus H. Anderson and Oscar Farsvall will erect \$10,000 cotton gin.

Tex., Ector.—Dulaney Gin Co., capital stock \$10,000, incorporated by A. B. Scarborough, J. J. Pritchett, G. M. Huffaker and others.

Tex., Houston.—Merchants' Compress Co. will reorganize with Wm. D. Cleveland as president and increase capital to construct additional extensive cotton compress, warehouse and shed facilities; has 2300 feet and 63 acres land on ship channel, two miles from Houston.

Tex., Texas City.—Cotton exporters have formed association; now contracting for large high-pressure cotton compress; names not announced. (See "Warehouses" under "Building Contracts Awarded.")

### COTTONSEED-OIL MILLS

Fla., Jacksonville.—W. H. Camp and L. G. Neal, Atlanta, Ga. (representing Atlanta capitalists), are arranging to establish cottonseed-oil and fertilizer plants.

Tex., Brownsville.—People's Ice Co. will

build cottonseed-oil mill; machinery building 50x120 feet, seedhouse 80x100 feet, cakehouse 50x80 feet and boiler and engine room; all of iron construction; machinery purchased, including 60-ton cottonseed-oil press, 300-horsepower tandem compound condensing Corliss engine and delinting equipment consisting of 12 linters, with 120 12½-inch saws each, connected with electro-magnets to remove iron or other metal in seed; cold press oil machinery will consist of six expellers with capacity 10 tons each; total cost \$50,000.

### DRAINAGE AND IRRIGATION

Ark., Desha County.—O. G. Baxter, United States Engineer, 527 Southern Trust Bldg., Little Rock, Ark., states plans for further drainage work in Desha county will not be finished before middle summer; preliminary surveys just completed; propose draining 300,000 acres. (Contract recently noted awarded by Drainage District No. 4 to G. A. McWilliams, 1600 Steger Bldg., Chicago, Ill., for drainage ditches reclaiming 25,000 acres.)

Ark., Helena.—Beaver Bayou Drainage District will construct drainage canals; Johnson Bayou ditch, 307,000 cubic yards; Lick Creek ditch, 539,000 cubic yards; Beaver Bayou ditch, 675,000 cubic yards; Hillside ditch, 85,000 cubic yards; bids received until April 25; C. B. Bailey, consulting engineer, Wynne, Ark.; J. A. Gulasinger, resident engineer, Helena. (See "Machinery Wanted.")

Md., Buckeystown.—Buckingham Industrial School will construct irrigation system; erect pumping station near bank of Monocacy River (along entire side of farm) and lay mains to carry water inland; N. B. Williams prepared plans and will construct system.

Okl., Oklahoma City.—A. J. Vance will construct irrigation system on farm one-half mile east of Canadian River; drill wells to supply reservoir, from which water will be pumped to central canal.

Tenn., Memphis.—J. H. Weatherford, City Engineer, is preparing maps and estimates for system to protect city from floods.

Tex., Alice.—McCarthy Bros., Minneapolis, Minn., and associates will construct irrigation system; build dam across San Diego Creek; J. F. MacCarthy will make surveys.

Tex., Brownsville.—I. G. Keeler, R. F. D. No. 1, advises as follows: Construction progressing in drainage district No. 1; amount authorized for district No. 2, \$106,490.50 (bonds not yet issued); No. 2 district has 20,000 acreage; Commissioners are A. H. Darling, chairman; I. G. Keeler, secretary, and Geo. Fedderolf, all of Brownsville; district No. 3 recently granted by County Commissioners. (Previously noted.)

Tex., El Paso.—El Paso county voted bond issue for protection of valley lands between Washington Park and Ysleta from high waters of Rio Grande. Address County Commissioners.

Tex., Hamshire.—Hamshire Drainage District of Jefferson county votes May 11 on \$100,000 bond issue to construct drainage system; E. A. Dieter, engineer, made surveys and submitted report to Jefferson County Commissioners, Beaumont, Tex.; district comprises 80,500 acres.

Tex., Orange.—Orange County Irrigation Co. contracted with A. C. Wilkins, secretary Southern Rice Growers' Association, to extend five-mile canal distance of six miles.

### ELECTRIC PLANTS

Ark., Brinkley.—Brinkley Light & Water Co. engaged Richard C. Huston, 1634 Exchange Bldg., Memphis, Tenn., as engineer for proposed improvements.

Ark., Hardy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust Bldg., Memphis, Tenn. (previously noted organized with \$100,000 capital stock), will operate electric-light plant, etc. (See "Land Developments.")

Ga., Americus.—Americus Power Co. will be incorporated; build electric-light and power plant to cost \$50,000.

Ga., Cuthbert.—City will enlarge and improve light and water plant; cost \$20,000. Address The Mayor.

Ga., Manchester.—City, Willis E. Johnson, Mayor, will construct proposed lighting plant; brick power-house; five miles pole lines; necessary equipment; engineers, J. B.



McCrory Company, Atlanta, Ga.; bids received until 12 M. May 1. (See "Machinery Wanted.")

Ga., Monticello.—City votes May 6 on \$7000 bond issue for electric-light plant. Address The Mayor.

Ga., Valdosta.—Municipal Service Co., H. T. Hartman, president, 1330 Land Title Bldg., Philadelphia, Pa., purchased Consolidated Ice & Power Co. for \$300,000; will probably install 500-kilowatt turbine with surface condenser and either 250 or 500 horse-power water-tube boiler for 165 pounds working and 100 degrees super heat; will also add transformers, meters, transmission wires, etc.; this year's improvements estimated to cost \$45,000; Mr. Hartman, G. B. Baker and C. L. Ayling of Boston, Mass., and W. B. Conoley of Valdosta have incorporated Valdosta Lighting Co. with \$300,000 capital stock.

Md., Baltimore.—City awarded contract to S. W. Rosenfeld Electric Co., Lombard and Howard Sts., Baltimore, at \$8906 to install and equip ornamental lighting system on Charles St., between 29th St. and University Parkway, and on University Parkway between Charles St. and Stony Run Bridge; 75 feet between each lamp; each lamp to be about 80 candle-power.

Miss., Biloxi.—City contemplates erection of electric-light plant; committee, I. Heidenheim, John Kennedy and J. C. Batton. (See "Machinery Wanted.")

Miss., Crystal Springs.—City will improve electric-light plant and water-works; issue \$10,000 bonds. Address The Mayor.

Miss., Hattiesburg.—Central Electric Co., capital stock \$10,000, incorporated by P. C. Guerin, E. E. Esslinger and others.

Mo., Kansas City.—Missouri Valley Light & Power Co., capital stock \$250,000, incorporated by R. G. Lafite, C. H. Smith and Otto McMahan.

N. C., Kernersville.—City voted \$5000 bond issue to purchase electric-light plant. Address The Mayor. (Recently mentioned.)

Okla., Henryetta.—Henryetta Ice & Light Co., capital stock \$10,000, incorporated by H. H. McFann, G. W. McFann and Virgil Hicks, all of Sapulpa, Okla.

Okla., Oklahoma City.—Oklahoma Power & Electric Co., Croslen & Chappelle, engineers in charge, 804 Colcord Bldg., advise Manufacturers Record company plans constructing power plant to cost \$1,500,000; develop 100,000 horse-power; use consumers gas made at mines; install steam turbines of 8000 to 12,000 horse-power units; make of turbine not determined; company states it owns 300,000,000 tons coal. (See "Machinery Wanted.")

Okla., Pawhuska.—City awarded contract to Kennedy & Fleming, State National Bank Bldg., Oklahoma City, Okla., for furnishing and installing machinery and equipment for electric-light plant and water-works. (See "Water-works.")

Okla., Wagoner.—City will receive bids for complete light plant and water-works, including pumps, etc.; \$40,000 bond issue available; plans previously noted prepared by Benham Engineering Co., 714 Campbell Bldg., Oklahoma City, Okla.; John B. Cook, Mayor. (See "Water-Works" and "Machinery Wanted.")

Tex., Alpine.—Charles A. Schraff contemplates installing electric-light plant.

Tex., Anson.—City Water & Light Co. incorporated by A. W. Johnson and others. (See "Water-works.")

Va., Coeburn.—Coeburn Light & Power Co. contemplates improvements to plant.

W. Va., Wheeling.—Wheeling Traction Co. will, it is reported, receive bids until April 29 to erect one and two-story power-house and car barn; probable cost, \$60,000; plans by L. Killees, 1217 Chapline St. (Previously mentioned.)

## FERTILIZER FACTORIES

Ala., Florence.—American Cyanamid Co., Stahlman Bldg., Nashville, Tenn., contemplates building plant to manufacture atmospheric nitrogen, utilizing electric power from Mussel Shoals (on Tennessee River) when this water-power is developed by Alabama Traction, Light & Power Co. (Alabama Interstate Power Co.), Bell Bldg., Montgomery, Ala. American company writes to Manufacturers Record: "There is nothing we can give out at this time; as soon as we are in a position to publish details we will communicate them to you." (Recent report stated it was understood American Cyanamid Co. proposed this plant.)

Fla., Jacksonville.—W. H. Camp and L. G. Neal, Atlanta, Ga. (representing Atlanta capitalists), are arranging to establish cottonseed-oil and fertilizer plants.

Fla., Orlando.—Southern Fertilizer Works will rebuild burned plant.

Ga., Hillsdale.—Southern Calcium Phosphate Co., incorporated with \$2,500,000 capital stock to manufacture fertilizer without sulphuric acid by process invented by Geo. R. Fishburne; president, George R. Fishburne; vice-president, John H. Hill; secretary-treasurer, W. R. Hill; consulting engineer, Ellis C. Soper; all of Chattanooga, Tenn.; will operate in connection with Horine Development Co.'s cement, lime and rock works (now building at Hillsdale) as crushed limestone enters into new process. Southern company writes Manufacturers Record: "Details not ready; expect to locate plants at Hillsdale, Atlanta, Macon, Charleston, Birmingham, Selma, Mobile, Montgomery, and probably other cities."

W. Va., Sanson (not a postoffice).—Washington, Alexander & Cooke Company, Charles Town, capital stock \$25,000, incorporated by John A. Washington, W. F. Alexander and E. E. Cooke and others; officers not elected; will manufacture fertilizer; 200 tons daily; erect frame buildings. (See "Machinery Wanted.")

## FLOUR, FEED AND MEAL MILLS

Ark., Hardy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust

**F**OR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department, we issue every business day in the year a Daily Bulletin of the Manufacturers Record.

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Bldg., Memphis, Tenn. (previously noted organized with \$100,000 capital stock), will operate flour mill, etc. (See "Land Developments.")

Fla., Arcadia.—W. H. Barnett contemplates building feed mill and shop.

N. C., Troy.—Troy Milling Co., Barna Allen, president, will erect mill buildings recently noted; fireproof; 40x50 feet; cost \$4000; open building proposals about May 1; estimated cost of flour and feed machines, \$8000; now open to consideration of machinery proposals. Address J. W. Lemonds, manager. (See "Machinery Wanted.")

## FOUNDRY AND MACHINE PLANTS

Mo., Joplin.—Concrete-block Machines.—E. D. Francisco, Des Moines, Ia., is considering, it is reported, establishing plant to manufacture machines for molding concrete blocks.

Mo., St. Louis.—Gas Engines.—Busch-Sulzer Bros., Diesel Engine Co., has begun to clear site for gas engine works; now plans investing about \$500,000 for buildings and equipment; engineers in charge, B. and J. Arnold, Chicago, Ill. (Organization and general plans previously reported.)

## GAS AND OIL DEVELOPMENTS

Del., Dover.—Southern Oil Fields Co. chartered with \$50,000,000 capital stock to develop oil and other natural resources; represented by Corporation Trust Co. of America, Equitable Bldg., Wilmington, Del.

La., Jennings.—Marguerite Oil Co., Evangeline, La. (recently noted incorporated with \$10,000 capital stock), will drill oil wells; bids opened April 1; Edward La-

guerre, engineer in charge, Box 106, Evangeline, La. (See "Machinery Wanted.")

Miss., Vicksburg.—Edmond Oil Co., capital stock \$50,000, incorporated; W. B. Robb, president-general manager; H. H. Havis, vice-president; Harry Rice, second vice-president; W. C. Sharpe, secretary-treasurer.

Okla., Chickasha.—Chickasha Oil & Gas Development Co., capital stock \$10,000, incorporated by J. D. Buie, Jeremiah Riddle, J. P. Brownlow and others.

Okla., Tulsa.—Gem Oil Co., capital stock \$5000, incorporated by J. A. Bassford, N. J. Cook and J. H. Ward.

Tex., Fort Worth.—S. R. Howe and associates applied for franchise to construct pipe line for crude petroleum and its products.

Tex., Gonzales.—Bill Johnston Oil Co., capital stock \$10,000, incorporated by W. W. Johnston, D. U. Ramsay, C. E. Dilworth and others.

Tex., Wortham.—Wortham Mining Co. organized with \$12,000 capital stock by T. B. Poindexter, H. C. Mackney, T. A. Bounds and J. J. subbs of Wortham and Bush Witherspoon, Corsicana, Tex.; leased 10,000 acres and will drill for oil.

W. Va., Charleston.—Blue Creek Production Co., capital stock \$18,000, incorporated by George S. Couch, Jr., Wilcox Adams, A. L. Romine and others.

## ICE AND COLD-STORAGE PLANTS

Ark., Hardy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust Bldg., Memphis, Tenn. (previously noted organized with \$100,000 capital stock), will operate cold-storage plant, etc. (See "Land Developments.")

Ark., Hot Springs.—Hot Springs Ice & Coal Co. organized with \$50,000 capital stock; will build ice plant.

Ga., Doerun.—I. F. Walker, Camilla, Ga., states he will not establish ice plant recently noted.

Ga., Rome.—M. P. Wood, Lagrange, Ga., contemplates building ice plant.

Ky., Henderson.—James L. Nicholson will build cold-storage plant; capacity 15,000 to 25,000 barrels; cost \$60,000.

Mo., St. Louis.—Tyler Warehouse Co., capital stock \$8000, incorporated by R. T. Wintermann, Joseph A. Monnig and O. J. Wintermann; operate refrigerator and ice-manufacturing plants, etc.

N. C., Rutherfordton.—Carpenter, Taylor & Co. contemplates building 10-ton ice plant.

Okla., Henryetta.—Henryetta Ice & Light Co. incorporated by H. H. McFann and others. (See "Electric Plants.")

S. C., Hartsville.—D. W. Cole contemplates erection of ice plant; probably 15 tons. (See "Machinery Wanted.")

Tenn., Knoxville.—First Creek Ice Co., capital stock \$25,000, incorporated by T. A. Wright, Robert M. Jones, A. Rosenthal and others.

Tenn., Obion.—Obion Milling Co. reported to build 10-ton ice plant.

Tenn., Springfield.—Porter Ice & Storage Co., A. B. Porter, president, arranged for

machinery for recently-noted 15-ton ice plant; cost \$10,000; awarded contract to J. H. Perry & Co., Springfield, to erect \$4000 brick 42x90-foot building with concrete floors.

Tenn., Tullahoma.—Tullahoma Tobacco & Manufacturing Co. will erect 15 to 20-ton ice and cold-storage plant; B. H. Wilkins, president. (See "Miscellaneous Enterprises" and "Machinery Wanted.")

Tex., Houston.—B. A. Reiser will erect warehouse (not cold-storage plant as recently noted) for Desel-Boettcher Company. (See "Warehouses.")

Tex., San Antonio.—Merchants' Ice & Cold-Storage Co., George B. Marshall, general manager, will enlarge cold-storage plant to double capacity; build ice-storage room of 2500 tons capacity, install additional refrigerating machinery, etc.; cost \$200,000.

Va., Elkton.—Elkton Co-operative Dairy Association, J. Luther Hopkins, president, will construct ice plant and creamery; plans for ice plant not determined. (See "Miscellaneous Factories.")

## IRON AND STEEL PLANTS

Ala., Birmingham.—Woodward Iron Co., merger with Birmingham Coal & Iron Co. now complete; former wires Manufacturers Record: "No change in personnel of officials of this company; management not authorized by directors to make announcement in regard to proposed additions to plant." An unconfirmed report states "Woodward Iron Co. of Delaware (the new corporation) will issue bonds (\$25,000,000 authorized) \$13,500,000, preferred stock \$3,000,000 and common stock \$10,000,000; has three blast furnaces at Woodward and two at Boyles; annual capacity 375,000 tons iron; combined properties estimated to contain 380,000,000 tons coal, 280,000,000 tons red iron ore and 10,000,000 tons brown ore; surface holdings, 37,000 acres; owns 21.4 miles railway; now operating 60 by-product coke ovens; plan to build 90 additional; at Woodward build blast furnace of 400 tons capacity, replacing small No. 1 furnace of group; present steam-blowing engines retained as reserve plant and two turbo blowers of 55,000 cubic feet capacity to be installed; whole power plant operate condensing; No. 2 Vanderbilt furnace will be relined, as well as its stoves, and equipped with new top; at Mulga coal mine second shaft will be equipped to bring output to 2500 tons daily; at Woodward furnace impounding reservoir will be built with capacity 200,000,000 gallons; new construction begin at once." (Woodward Iron Co. plan to acquire Birmingham Coal & Iron Co. and undertake extensive betterments previously outlined.)

## LAND DEVELOPMENTS

Ala., Mobile.—Mobile Plantation Co., capital stock \$50,000, incorporated; owns 417 acres near Mann Station; 25 acres developed; will plant principally pecan and Satsuma orange trees; George A. Craig, president, Toledo, O.; George T. Bishop, secretary-treasurer; H. B. Abels, assistant secretary, both of Cleveland, O.; T. R. Littlepage, manager, Washington, D. C.

Ark., Hardy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust Bldg., Memphis, Tenn., controls 4000 acres of land in foothills of Ozark Mountains; 3000 acres to be colonized and divided into 5, 10, 15 and 20-acre truck farms; has purchased mill, cotton gin and dam site of Hardy Milling Co.; will operate cold-storage and electric-light plant and cannery; establish dairy and \$5000 poultry plant; also erect hotel and reserve 400 lots for summer homes.

Fla., Crainlyn.—Crainlyn Development Co., capital stock \$50,000, incorporated by Edward H. Crain of Crainlyn, W. A. Evans, E. Van der Poel and Charles A. Roux, all of Jacksonville, Fla., and Theodore A. Sweeting, Key West.

Miss., Hattiesburg.—Mississippi Development Co., capital stock \$30,000, incorporated by H. C. Mills, Brookhaven, Miss.; John F. Rodgers and H. J. McDonald, Chicago, Ill.; will develop and colonize cut-over pine lands.

Mo., St. Louis.—A. R. Schollmeyer and associates awarded contracts for improvements at Hillcrest: John B. Turner Co., curb and gutter, \$14,844; sidewalks, \$14,969; Meyers Construction Co., sewers, \$24,339.96; John B. Turner Company, streets, \$21,004; streets are to be oiled Telford, laid under Travilla specifications; contracts also signed with St. Louis County Water & Light Co. for laying water pipe and with St. Louis County Gas Co. for laying gas pipe.

Tenn., Chattanooga.—Bridge Land Co., capital stock \$50,000, incorporated by S. M. and John Chambliss, W. B. Royster, Stephen A. Roddy and E. M. Buchanan.



Tex., Amarillo.—Amarillo Broomcorn Co., capital stock \$40,000, incorporated by A. J. Lundgreen, W. I. McAllister and Mike C. Lemaster.

### LUMBER MANUFACTURING

Ga., Arcola.—Zickgraf Lumber Co. purchased tract of yellow pine timber in Bullock county (about 8,000,000 feet); has begun construction of circular mill of 15,000 feet capacity; contemplates operation by May 1; expects to build four miles logging road; W. C. Zickgraf of Arcola, president and manager; H. G. Zickgraf of Vanderbilt, Mich., vice-president.

Ga., Savannah.—Savannah Timber Co., capital stock \$150,000, incorporated by R. H. Knox, Thomas Hilton and W. C. Parker, Jr. Ky., Owensboro.—Kentucky-Indiana Hardwood Co., capital stock \$16,000, incorporated by Gustave Edward Bauman and others.

Ky., Winchester.—R. L. Thomas, Lexington, Ky., will establish hardwood lumber manufacturing plant.

La., New Orleans.—Pelican State Lumber Co., Sam R. Guyther, president, 420 Audubon Bldg., will at present deal in lumber, wholesale and on commission; may install sawmill and planing mill later. (Recently noted organized.)

N. C., Black Mountain.—Asheville Timber Co., American National Bank Bldg., Asheville, N. C., will build band sawmill with daily capacity 50,000 feet hardwood lumber and mill with daily capacity 60,000 slack barrel staves; buildings of wood; mill construction; machinery estimated to cost \$20,000; develop 12,238 acres Yancey county timber land; transportation via railway being constructed by Dickey & Campbell; build these mills at Black Mountain or Asheville. (Previously reported organized, etc.)

N. C., Ellerbe.—H. H. Day, C. A. Putnam and J. A. Hosley, Tupper Lake, N. Y., are reported as contemplating to establish lumber plant.

N. C., Morganton.—J. A. Atkinson Lumber Co., Bristol, Tenn., contemplates purchasing 38,500 acres timber land on Upper Creek in Burke county.

N. C., Waynesville.—W. S. Whiting (vice-president of Whiting Manufacturing Co., Land Title Bldg., Philadelphia, Pa.), president of Dover Lumber Co., advises (from Asheville, N. C.) that latter company will build sawmill recently noted; 120x40-foot structure; erection by company. (See "Machinery Wanted.")

N. C., Southport.—Southport Lumber & Timber Co., capital stock \$100,000, incorporated by J. W. Borum of Norfolk, Va.; George E. Hunt and C. R. Diggs of Southport.

Tex., Blocker.—Garretson-Greaser Lumber Co., St. Louis, Mo., will, it is reported, build hardwood lumber plant.

Va., Magnolia.—Culpepper & Philhower of Magnolia are operating lumber on land of Protective Land & Lumber Co. (recently noted incorporated under Norfolk, Va.), and should be addressed relative to that development. (W. C. Lynch incorrectly noted in recent item.)

W. Va., Huntington.—T. W. Elswick Lumber Co., capital stock \$10,000, incorporated by T. W. Elswick, A. C. Elswick, M. P. Wiswell and others.

### METAL-WORKING PLANTS

Md., Baltimore.—Wire Cloth.—Norfolk Wire Cloth Co., capital stock \$1000, incorporated by Joseph W. Bristol (United States Fidelity and Guaranty Bldg.), Paul R. Howard and Melvin E. Graham.

Okla., Enid.—W. W. Coates of Enid and E. G. Holbridge, Carmen, Okla., purchased plant of Oklahoma Iron Wire Fabric Co. and will equip for manufacturing tanks, wash-tubs and other galvanized-iron utensils; equipment purchased.

### MINING

La., New Orleans.—Gravel.—Brookhaven Gravel Co., capital stock \$300,000, incorporated; will acquire and continue Southwestern Gravel & Material Co.; Bernard McCloskey, president; John J. Gannon, vice-president; Rudolph S. Hecht, secretary-treasurer.

Mo., St. Louis.—Copper.—Camden Copper Co., capital stock \$100,000, incorporated by George M. Heath, M. H. Wolfe, E. V. Schoenfeld and others.

N. C., Shelby.—Emerald.—Lovat Fraser and Ellis P. Earle of New York purchased emerald mine and mining rights on 166 acres; will organize company and develop.

W. Va., Mason.—Salt, etc.—Superior Coal, Salt & Chemical Co., capital stock \$100,000, incorporated by L. C. Somerville, J. S. Spen-

cer and E. C. Winger, all of Point Pleasant, W. Va.; M. G. Tyler of Spillman, W. Va., and others.

### MISCELLANEOUS CONSTRUCTION

Fla., St. Petersburg.—Seawall.—Snell & Hamlett will build seawall, also dredge channel into Coffee Pot Bayou. (See "Road and Street Work.")

La., New Orleans.—Wharf.—Port Commissioners will instruct A. C. Bell, engineer, to prepare plans for wharf; 1500 feet long; 210 feet wide.

Md., Baltimore.—Dredging.—City awarded contract to Maryland Dredging & Contracting Co., Fidelity Bldg., Baltimore, for dredging in connection with commercial wharf and recreation pier at foot of Broadway; 130,000 to 150,000 cubic yards material to be removed.

Tex., Dallas.—Underground Wire System.—Edward T. Moore, general manager Dallas Street Railways, wires Manufacturers Record: "Details of proposed underground wire system not completed at this time." Plans include laying wires under ground on Main, Elm, Commerce and side streets; reports state estimated cost is \$800,000.

Tex., Brownsville.—Canal.—Company organized with \$100,000 capital stock to construct deep-water canal from Brownsville to Gulf of Mexico. Address L. A. Whitney, secretary Chamber of Commerce.

Tex., Port Bolivar.—Dredging.—Santa Fe Dock & Channel Co. awarded contract to North American Dredging Co., San Francisco, Cal., to dredge slips at Port Bolivar to depth of 30 feet; cost \$40,000.

Tex., Texas City.—Pier.—Texas City Transportation Co. will construct steel and concrete pier and double-decked warehouse; 900 feet long and 300 feet wide; contract awarded. (See "Warehouses" under "Building Contracts Awarded.")

### MISCELLANEOUS ENTERPRISES

Ark., Fort Smith.—Cleaning and Dyeing.—Glick Cleaning & Dyeing Co., capital stock \$5000, incorporated; Joseph Glick, president.

Ark., Hardy.—Dairy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust Bldg., Memphis, Tenn., will operate dairy and \$5000 poultry plant. (See "Land Developments.")

Ga., Milledgeville.—Laundry.—Thomas W. Jones, Columbus, Ga., states will probably open recently-noted laundry about July 1; equipment partially supplied. (See "Machinery Wanted.")

Md., Baltimore.—Contracting.—The Kensington Company, capital stock \$10,000, incorporated by Clarence H. Hurlock (224 St. Paul St.), Harry H. Brown and Walter S. Smick.

Md., Baltimore.—Contracting.—Minor Bros., capital stock \$10,000, incorporated by J. Royal Tippet (606 Hoffman Bldg.), Robert Minor and Philip H. Minor.

Md., Baltimore.—Plumbing.—Monumental Plumbing Co., capital stock \$10,000, incorporated by August Schoenlein (2217 E. Baltimore St.), James J. Jung and William J. Carrick.

Md., Baltimore.—Building Materials.—Hudson Cement & Supply Co., 18 Builders' Exchange, 24 E. Lexington St., increased capital stock from \$25,000 to \$100,000.

Md., Clalborne.—Steamship Company.—Company organized with A. J. McIntosh of New York, president, to operate steamship line between Clalborne and Annapolis; capital stock \$100,000.

Mo., St. Louis.—Construction.—Rugg Construction Co., capital stock \$10,000, incorporated by O. E. Rugg (president), Marcus Masters and W. B. Daniels.

Okla., Coweta.—Printing.—Coweta Printing Co. incorporated by J. W. Stephenson, Ira G. Dunlap, C. K. Leslie, J. E. Jerome and others.

Okla., Duncan.—Engineering.—Oklahoma Hydraulic Engineering Co., capital stock \$25,000, incorporated by E. R. Thomas, J. D. Hix, D. T. Sledge and others.

Okla., Muskogee.—Contracting.—Electric Contracting Co., capital stock \$5000, incorporated by C. D. Dunbar, R. Dunbar and C. P. Gotwals.

Tenn., Chattanooga.—Construction.—Crox-Hallahan Construction Co., capital stock \$5000, incorporated by D. L. Brown, R. J. Brown and C. O. Beaver.

Tex., Abilene.—Crematory, etc.—City votes May 6 on \$7000 for crematory and \$10,000 for purchase of auto fire apparatus; E. N. Kirby, Mayor. (Bond issue recently noted as for crematory only.)

Tex., Dallas.—Motor Car Supplies.—The Flak Company, capital stock \$25,000, incorporated by Dan Sonnentheil, E. H. Peck and H. G. Flak.

Tex., Marshall.—Abattoir.—City will vote on bond issue to build abattoir. Address The Mayor.

Va., Norfolk.—Navigation.—West Shore Navigation Co., capital stock \$50,000, incorporated; G. S. Briggs, president; H. C. Johnson, vice-president; W. T. Dey, secretary and treasurer.

Va., Richmond.—Dairy.—United Farm Corporation, capital stock \$300,000, incorporated; W. W. Jackson, president; J. G. McHenry, vice-president; J. G. Reading, secretary-treasurer, all of Williamsport, Pa.; purchased Bolling Hall farm, about 30 miles up James River, comprising 1800 acres, and will establish dairy farm; about 600 acres are river low ground and about 600 acres of upland are cleared; purchase price of land \$30,000; about \$200,000 will be expended for improvements.

### MISCELLANEOUS FACTORIES

Ala., Oxford.—Mops.—Golden Crown Manufacturing Co., C. A. Orr, manager, will increase capacity of plant; present capacity 1000 mops per week.

Ark., Fort Smith.—Brooms.—Southern Broom Co. will expend \$3000 to erect fireproof building to replace burned structure recently noted; daily capacity, 100 brooms. (See "Machinery Wanted.")

Fla., Tampa.—Cigars.—C. S. Garcia, capital stock \$10,000, incorporated; C. S. Garcia, president; W. H. Moore, vice-president; Albert Anderson, secretary-treasurer.

Ga., Columbus.—Marble and Granite.—Columbus Marble & Granite Co., capital stock \$100,000, incorporated; G. E. Strupper, president-treasurer; G. F. Paracca, vice-president; B. H. Strupper, secretary.

Ga., Rome.—Valves.—Georgian Manufacturing Co. awarded contract to J. F. Dupree & Son to enlarge plant; brick; 67x350 feet.

Ky., Louisville.—Monuments.—Muldoon Monument Co., capital stock \$10,000, incorporated by Peter B. Holland, John J. Davis and Annie Holland.

La., New Orleans.—Rugs.—T. D. Sadler and associates will establish rug-making and carpet-cleaning plant; leased building at Carondelet and Toledana Sts.; 20,000 square feet floor space.

La., New Orleans.—Turpentine, etc.—Slidell Pine Products Co., capital stock \$50,000, incorporated by J. D. Lacy, E. R. Dumont, William Danner and others.

Md., Baltimore.—Bakery.—Charles C. Roes, 1018 W. Saratoga St., will build bakery at 1009-1011 Sarah Ann St.; one story; brick and stone; 21x50 feet; slag roof; fireproof; plans by Fred C. Carstens, 655 Cider Al.

Md., Baltimore.—Gas.—Consolidated Gas, Light & Power Co., J. E. Aldred, president, will open bids within few days to erect gas-purifier house; 108x87x39 feet; ordinary construction; steel roof trusses; slate on two-inch sheathing; cost \$35,000; designed for eight 21x35x12-foot gas-purifier boxes; four only to be installed at present; machinery contract let; bidders recently noted invited to estimate are Benjamin F. Bennett Building Co. (324 N. Howard St.), J. Henry Miller (106 Dover St.) and Singer-Pentz Company (600 Equitable Bldg.), all of Baltimore.

Md., Baltimore.—Automobile Wheels, etc.—Elastic Wheel Co. incorporated by Schutler C. Hatfield (3733 Pimlico Blvd.) and George W. Smith, both of Baltimore, and Isaac Fogg, Wilmington, Del., to manufacture automobile and other vehicle wheels, etc.

Md., Baltimore.—Silver.—Charles C. Stieff, 17 McLane Pl., will expend \$15,000 to erect addition to factory; 26x150 feet; three stories; ordinary construction; steam heat; gas lighting; belt elevator; slag roof; private plans; contract recently noted awarded to Henry Pierson & Sons, 1000 Olive St., Baltimore.

Md., Baltimore.—Drugs.—Peerless Drug Co., capital stock \$2500, incorporated by Harry P. Dukehart (2473 Frederick Ave.), Edgar R. Andrews and R. Lee Slingluff.

Md., Baltimore.—Asphalt.—P. Flanagan & Sons, 120 E. Lexington St., will build asphalt mixing plant on Harford Rd.; steel and concrete; daily capacity, 3000 square yards; cost \$50,000; contract awarded to John F. Hardy, Groveland and Eldorado Aves., Baltimore.

Miss., Vicksburg.—Drugs.—McGee Drug & Chemical Co., capital stock \$50,000, incorporated by Lindsay McGee, J. K. Hazlip and C. D. Bloch.

Mo., Poplar Bluff.—Distillery.—James R. Hogg Distilling Co., capital stock \$30,000, incorporated by James R. Hogg, Ransom M. Elkins and C. F. Schulz.

Mo., St. Louis.—Fire Extinguishers.—General Fire Extinguisher Co., capital stock \$46,

000, incorporated by O. C. Barber, G. Gunby Jordan, F. H. Maynard and Edward Holbrook.

Mo., St. Louis.—Brewery.—Mutual Brewing Co. will erect five buildings; brewery, 202x106 feet, cost \$143,700; office, two stories, 50x37 feet, cost \$4970; bottling-house, 47x73 feet; two stories, cost \$7850; stable, 69x71 feet, two stories, cost \$6350; icehouse, one story, 34x115 feet, cost \$5890. (Previously mentioned.)

Mo., St. Louis.—Bottling.—Midcity Bottling Co., capital stock \$5000, incorporated by Wm. Freudenau, Ellen R. Freudenau and Joseph V. Grimm.

Mo., St. Louis.—Clothing.—Frelch-Kurlander Bros. Garment Co., capital stock \$100,000, incorporated by Samuel Frelch, R. W. Lemon, Charles and Sol Kurlander and Abe Frelch.

N. C., Charlotte.—Fire Appliances.—National Fire Appliance Co. of North Carolina, 22 W. 5th St. (recently noted incorporated with \$25,000 capital stock), will manufacture fire extinguishers and fire-fighting apparatus; purchased machinery and material; John T. Fletcher, Jr., president; U. S. Goode, secretary-treasurer.

N. C., Durham.—Gas.—Carolina Power & Light Co., Raleigh, N. C., will construct 1½ miles of additional mains; cost \$10,000.

N. C., Durham.—Cigarettes, etc.—Special correspondent wires Manufacturers Record: "American Tobacco Co., T. B. Yulie, vice-president, New York, will move cigarette plant here; will erect stemmer building after plant has been established in old building here."

N. C., High Point.—Glass.—Frank Wemskie will, it is reported, establish glass factory.

N. C., Rockingham.—Bedding.—Rockingham Bedding Co., capital stock \$25,000, incorporated by Claud Gore, J. T. West, A. G. Corpening and others.

N. C., Spencer.—Gas.—North Carolina Public Service Co. will extend gas mains through principal streets in Spencer and to East Spencer.

Okla., Bartlesville.—Electrical Specialties.—Electrical Specialty Co., capital stock \$50,000, incorporated by H. V. Foster, R. D. Rood and James P. Anderson.

Okla., Ponca.—Gas.—People's Gas Co., capital stock \$100,000, incorporated by E. W. Marland, B. L. Hobbs and L. H. Wentz.

Tenn., Knoxville.—Clothing.—Smith & Harrison awarded contract to S. M. Beaumont & Co. of Knoxville to erect factory building; four stories; pressed brick; main building, 50x110 feet; cost \$50,000; plans by Baumann Bros. of Knoxville.

Tenn., Tullahoma.—Tobacco.—Tullahoma Tobacco & Manufacturing Co. organized with \$25,000 capital stock; purchased Volunteer Mills and will overhaul for daily capacity 1000 barrels flour and several hundred bushels bolted corn; will add 20-ton ice plant, cold-storage warehouse, tobacco factory, etc.; B. H. Wilkins, president; John W. Harton, vice-president; A. L. Davidson, treasurer; Jack Crouch, Jr., secretary and general manager.

Tex., Beaumont.—Syrup Mill.—W. W. Kyle contemplates erecting cane syrup mill; 500 gallons capacity. (See "Machinery Wanted.")

Tex., Corsicana.—Weller Manufacturing Co., capital stock \$20,000, incorporated by J. L. Weller, J. A. Thompson and L. Treadwell.

Tex., Dallas.—Paint.—Laquerall Manufacturing Co., capital stock \$100,000, incorporated by S. W. Summers, E. S. Marshall and A. G. Elliott, Jr.; will erect buildings and equip to manufacture paints and lacquers; cost \$25,000.

Tex., Houston.—Gas.—Houston Gas Co. will reorganize; expend \$300,000 during present year for improvements, including gasholder with capacity 3,000,000 feet (cost \$180,000) and 16 to 17 miles additional mains; plans issuing \$2,000,000 bonds.

Tex., Yoakum.—Gas.—City Council has, it is reported, granted 50-year franchise to J. W. Greer and associates to install gas-generating plant and distributing system.

Va., Elkton.—Creamery, etc.—Elkton Cooperative Dairy Association, J. Luther Hopkins, president, will open bids June 15 to erect creamery and ice plant; fireproof construction; cost \$4400; Hastings Industrial Co., Chicago, Ill., probable contractor; creamery machinery purchased; plans for ice plant not determined. (Recently noted.)

Va., Norfolk.—Mattresses.—Norfolk Mattress Co., capital stock \$50,000, incorporated; Benjamin Margolius, president; D. L. Margolius, vice-president; S. E. Myers, secretary and treasurer.

Va., Pulaski.—Creamery.—Blue Grass Cream-



ery (B. Laughon interested) will establish plant; butter, milk and ice-cream; open proposals July 1 for 25x10-foot \$6000 brick building; machinery to cost \$5000.

Va., Wakefield.—Overalls.—Traylor Manufacturing Co., capital stock \$15,000, incorporated; F. S. Traylor, president; F. D. Baker, vice-president; J. S. White, secretary and treasurer.

## MOTORS AND GARAGES

Ga., Atlanta.—Automobiles.—Mrs. John W. Akin is having plans prepared by W. T. Downing, Atlanta, for building to be occupied by Packard Motor Co.; three stories; cost \$65,000; 88x150 feet.

Ga., Atlanta.—Garage.—Carroll Payne awarded contract to Fitzhugh Knox, Atlanta, to erect garage. (See "Contracts Awarded" and "Stores.")

Ga., Savannah.—Automobiles.—R. S. Brown Company incorporated with \$50,000 authorized capital stock by R. S. Brown and others; will deal in automobiles.

Md., Baltimore.—Garage.—Charter Automobile Co. incorporated with \$75,000 capital stock by Clinton R. Fouts, 1416 Harlem Ave.; William Edgar Byrd, 213 Courtland St., and George H. Reinhardt, all of Baltimore.

Ga., Atlanta.—Garage.—W. L. Peel will erect building for Locomobile Company; two stories and basement; elevator 14x26 feet; cost \$50,000; awarded contract to Solomon-Norcross Company, Atlanta; plans by Hentz & Reed, Atlanta.

La., New Orleans.—Garage.—Mrs. John A. Morris will erect garage. (See "Dwellings.")

Md., Baltimore.—Garage.—Eastern Auto & Machine Co. awarded contract to Consolidated Engineering Co., Bromo-Seltzer Tower Bldg., Baltimore, to erect garage on Philadelphia Rd. and Curley St.; one story; brick; 180x49 feet.

Md., Baltimore.—Garage.—Moses Solomon, Bayard and Nanticoke Sts., will erect garage on Whiteoak St. near McCulloh St.; 38x105 feet; capacity for 16 cars; cost \$4000.

Mo., St. Louis.—Automobiles.—Pennsylvania Automobile Co. incorporated with \$10,000 capital stock by William A. Fortner, Claude G. Fortner and others.

Mo., St. Louis.—Showrooms.—Oak Circuit & Realty Co. awarded contract to R. J. Loyd, St. Louis, to erect automobile showrooms; 60x290 feet; ordinary construction; lighting not decided; composition roofing; cost \$12,000; plans recently noted prepared by J. L. Wees, 410 Commercial Bldg., St. Louis.

Tenn., Memphis.—Garage.—S. M. Williamson of S. M. Williamson & Co. will erect garage and apartment building on Monroe Ave.; cost \$30,000.

Tex., Bishop.—Garage and Machine Shop.—W. H. Leslie will establish garage and machine shop; cost \$12,000 to \$15,000.

Tex., Bryan.—Garage, etc.—Dr. J. W. Howell has plans by and awarded contract to Lewis & Myerlamber, Bryan, to erect garage and store; 30x100 feet; ordinary construction; composition gravel roof; cost \$5000; recently noted to be occupied by Johnson & Rhode. (See "Machinery Wanted.")

Tex., Mercedes.—Garage and Machine Shop. Sterling Automobile Co., W. C. Bull, manager, awarded contract to H. Smith to erect garage and machine shop; 100x50 feet; metal construction; bids opened April 20 for machinery; E. E. Evans recently noted to erect garage, etc. (See "Machinery Wanted.")

Va., Alexandria.—Garage.—Capital Garage & Service Co. incorporated with \$125,000 capital stock; Lewis T. Cowie, president; Joseph B. Chapin, treasurer; Eugene A. Jones, 2120 18th St. N. W., all of Washington, D. C.

## RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Fla., Lakeland.—Atlantic Coast Line Railway Co., E. B. Pleasants, chief engineer, Wilmington, N. C., is reported to expend \$50,000 in terminals and freight buildings.

Ga., Savannah.—Seaboard Air Line Railway, W. L. Seddon, chief engineer, Portsmouth, Va., is reported to have decided on expending \$300,000 for Hutchinson Island terminal improvements, instead of \$150,000, previously mentioned.

Tex., Quanah.—Quanah, Acme & Pacific Railway, C. E. Ensminger, general manager, is reported as to expend \$10,000 for improvements to terminal facilities.

Tex., San Angelo.—Gulf, Colorado & Santa Fe Railway, F. Merritt, chief engineer, Galveston, Tex., will, it is reported, build shops, roundhouse and railroad yards.

Va., Norfolk.—Virginia Railway & Power

Co. awarded contract to J. H. Pierce of Norfolk to erect shops, car-barns, office building, etc.; shops will consist of machine shop, armature repair shops, blacksmith shop, carpenter shop and paint shop; all buildings of brick and reinforced concrete; steam heat; tungsten lamp lighting; vacuum cleaning system; plans by Neff & Thompson, Norfolk. (See "Miscellaneous Structures.")

W. Va., Millersville (not a P. O.).—Western Maryland Railway, H. R. Pratt, chief engineer, Hillen Station, Baltimore, Md., will erect shops, 30-stall roundhouse and coal tippie and provide additional yard facilities; estimated cost \$300,000; Robert & Schaefer Co., Chicago, Ill., has contract.

W. Va., Princeton.—Virginian Railway, H. Fernstrom, chief engineer, Norfolk, Va., awarded contract to George B. Swift Company, Chicago, Ill., to build erecting shop; 55 feet high, 127x270 feet, of steel and brick construction with gravel roof; cost \$80,000, exclusive of two cranes, 20 and 200 tons capacity each, ordered; Roanoke Bridge & Iron Co., Roanoke, Va., has contract for steel work; also awarded contract to George B. Swift Company to erect extension to stripping shop to be used as boiler shop, and for foundations for transfer table; former will be 70x100 feet; steel and brick construction, be equipped with 30-ton crane, and cost \$12,000; latter will be 75x410 feet and cost \$12,500; contract for table also awarded. (Recently mentioned.)

## ROAD AND STREET WORK

Ala., Brewton.—City will expend \$10,000 to construct sidewalks and curbs on three streets; W. H. Strong, Mayor. (Recently noted.)

Ala., Carrollton.—Pickens county will construct four miles sand-clay road; cost \$8000; surveys by T. D. Kemp, resident engineer, State Highway Department, Marion, Ala.; bids opened about May 15; C. G. Hudgins, official in charge. (County appropriation of \$4000, recently noted, to construct model road from Pickensville to Carrollton.)

Ala., Calera.—Shelby county will construct five miles chert road; cost \$8000; bids opened about June 3; surveys by T. D. Kemp, resident engineer, State Highway Department, Marion, Ala.; W. G. Nichols, official in charge. (Recently noted.)

Ala., Eutaw.—Greene county voted \$125,000 bond issue for road improvement; surveys by T. D. Kemp, resident engineer, State Highway Department, Marion, Ala., for 40 miles of gravel roads; address County Commissioners. (Recently noted.)

Ala., Mobile.—Board of Revenue, Mobile county, awarded contract to Southern Fuel & Material Co., Mobile, to surface road; work involves 76,886 tons screened gravel and 22,981 tons chert; amount available, \$500,000. C. L. Strange, Box 945, Highway Engineer. (Recently noted.)

Ala., Opelika.—Lee County Commissioners appropriated \$4000 toward construction of model State highway on road from Opelika to Beulah; State will appropriate similar amount; W. S. Kellar, State Highway Engineer, Montgomery, Ala.

Ala., Talladega.—Talladega county will construct five miles gravel road; cost \$10,000; surveys by T. D. Kemp, resident engineer, State Highway Department, Marion, Ala.; J. E. Camp, official in charge; bids opened April 15. (Recently noted.)

Fla., Fort Pierce.—St. Lucie County Commissioners awarded contract to Maule & Smith at \$176,034 for following: 117,000 yards grading; 9200 cubic yards shell in road; 10,000 cubic yards marl in road; 12,875 yards marl and shell; 24,000 cubic yards rock; contract for 100,000 cubic yards embankment let to same contractor at \$15,000; engineers, D. D. & C. M. Rogers, Fort Pierce. (Bids recently noted.)

Fla., St. Petersburg.—Snell & Hamlett will build seawall and boulevard along their "North Shore" properties and dredge channel into Coffee Pot Bayou. (See "Machinery Wanted.")

Ga., Cedartown.—City voted \$30,000 bond issue for street paving. Address The Mayor. (Recently mentioned.)

Ga., Gainesville.—City contemplates expending \$30,000 in street improvements; date of opening bids not set; P. E. B. Robertson may be addressed. (Recently noted.)

Md., Baltimore.—City will construct cement paths through squares between Philadelphia Rd. and Fayette St., Lakewood Ave. to Linwood Ave.; bids received until April 24; William S. Manning, general superintendent. (See "Machinery Wanted.")

Md., Baltimore.—City will pave with vitrified block on concrete base Mason and Jenk-

ins alleys between Preston and Hoffman Sts.; 880 square yards vitrified brick; 600 linear feet concrete curb; 150 cubic yards grading; also grade, curb and pave with sheet asphalt Huntington Ave., 32d, 33d, 34th and 35th Sts.; bids received until April 24; R. Keith Compton, chairman Paving Commission. (See "Machinery Wanted.")

Miss., Oxford.—Lafayette county votes May 4 on \$100,000 bond issue to construct roads in Beat No. 1; William Woodward, Clerk.

Miss., Canton.—District No. 1 of Madison county will improve roads; \$50,000 of bonds issued. Address County Commissioners.

Miss., Jackson.—City will issue \$90,000 bonds for street paving. Address The Mayor.

Miss., Water Valley.—Board of Commissioners Beat 4, Yalobusha county, engaged Richard C. Huston, 1634 Exchange Bldg., Memphis, Tenn., as engineer for about 100 miles highway improvement. (Bonds recently noted.)

Mo., Columbia.—Columbia Special Road District, Boone county, J. A. Hudson, chairman, and S. F. Conley, clerk, has \$100,000 available for gravel road construction; will build 22 miles new road; resurface 15 miles and grade roads in district eight miles square; State Highway Engineer Curtis Hill, engineer in charge; date of opening bids not settled.

Mo., Columbia.—Harg Road District of Boone county voted \$30,000 bond issue for road construction. Address District Commissioners.

Mo., St. Louis.—City will reconstruct North Market St. from Broadway to 15th St.; bids received until April 26. Address Board of Public Improvements. (See "Machinery Wanted.")

Mo., Wellsville.—Wellsville Special Road District of Montgomery County votes April 24 on \$45,000 bond issue to improve and gravel seven leading roads out of Wellsville. Address District Commissioners.

N. C., Asheville.—Buncombe County Commissioners awarded contract to Abbe, Huggins & Fry, Hickory, N. C., to grade Notia and Valley River roads.

N. C., Charlotte.—Executive Board awarded contracts for paving 161,000 yards streets as follows: to West Construction Co., Chattanooga, Tenn., at \$1.69 per square yard, yardage 71,248, total \$120,409.12 for bitulithic paving; Southern Paving Construction Co., Chattanooga, 45,263 yards asphalt paving at \$1.59 per yard, total \$71,968.17; Atlantic Bitulithic Co., Richmond, Va., at \$1.31 for 44,500 yards, totaling \$58,296, for bituminous macadam; Joseph Firth, City Engineer. (Bids previously noted.)

N. C., Charlotte.—City awarded contract to J. W. Haas of Charlotte at \$51,733.44 for 34,000 square yards cement sidewalks; Joseph Firth, City Engineer. (Call for bids lately noted.)

N. C., Charlotte.—City will pave Mint St. from Trade to Bland St. and W. 4th St. from Church St. to Southern Railway tracks with asphalt binder; E. 7th St. from Central Ave. to Hawthorne Lane with bitulithic or other material; E. 9th St. from Tryon to McDowell and W. 7th St. from Tryon to Church St.; Joseph Firth, City Engineer.

N. C., Raleigh.—Wake county will construct one mile of macadam road, with binder; 12 to 16 feet wide; bids received until May 6; W. L. Wiggs, general superintendent of roads. (See "Machinery Wanted.")

N. C., Hickory.—Hickory Township of Catawba county will construct roads; \$50,000 of bonds to be issued. Address Township Commissioners.

N. C., Statesville.—City will pave portions of Center and Broad Sts.; each 100 feet wide; lay 20-foot cement sidewalks for one block each way from square and pave remaining 80 feet; will pave two 20-foot driveways, leaving 20 feet in center for park purposes; paving material to be tarvia. Address The Mayor.

N. C., Winston (P. O. Winston-Salem).—City will vote again on \$75,000 bond issue for street improvements; election previously reported declared illegal. Address The Mayor.

N. C., Greensboro.—City contemplates issuing \$100,000 street and water bonds. Address The Mayor.

S. C., Greenville.—City votes May 7 on \$115,000 bond issue to pave streets and sidewalks; W. C. Beacham, Mayor pro tem. (Recently mentioned.)

Tenn., Chattanooga.—Hamilton county will construct 1st St., East Chattanooga; bids received until April 20; W. L. Dodds, County Engineer. (See "Machinery Wanted.")

Tenn., Benton.—Jas. H. Williamson, Polk county judge and chairman of county court, Box 163, states \$6000 to \$10,000 will be ex-

pended on construction of recently-noted pike roads; engineer not yet employed. (See "Machinery Wanted.")

Tenn., Morristown.—City, E. M. Grant, Mayor, will construct about one mile paving; probably let contract not later than June 1. (See "Machinery Wanted.")

Tex., Bastrop.—City will improve streets. Address Mayor Jenkins.

Tex., Bastrop.—Bastrop Justice Precinct of Bastrop county votes May 14 on \$80,000 bond issue for road construction; district includes Bastrop, Hills Prairie and Goodman. Address County Commissioners.

Tex., Beeville.—City awarded contract to construct 30,000 square feet sidewalk and curbing. Address The Mayor.

Tex., Corpus Christi.—City, Clark Pease, Mayor, will pave 100 blocks; date of opening bids not decided; H. A. Peabody, engineer in charge. (Bond issue of \$150,000 recently noted.)

Tex., Denison.—City awarded contract to Murphy-Moulton Company of Denison to pave E. Main St.

Tex., Fort Worth.—City will pave Houston St. from Weatherford to 10th St.; 17,671 square yards pavement and 5490 linear feet gutter; paving on present concrete foundation or on new concrete foundation; materials, vitrified brick, bitulithic, creosoted wood block, rock asphalt, asphaltic concrete, bituminous concrete, sheet asphalt or granitoid; bids received until April 23; J. H. Maddox, Commissioner of Streets and Public Property. (See "Machinery Wanted.")

Tex., Granger.—City awarded contract to J. O. Polhemus, Austin, Tex., to pave Davilla St. with vitrified brick.

Tex., Kerrville.—City votes April 23 on \$20,000 bond issue to grade, gravel and repair streets and sidewalks. Address The Mayor.

Tex., Lewisville.—Denton County Commissioners, Denton, Tex., awarded contract to O. E. Cobb of Lewisville to construct rock-macadam and gravel roads; \$75,000 bond issue voted.

Tex., Marshall.—City will vote on bond issue for street paving. Address The Mayor.

Tex., Marlin.—City will pave Railroad St. between Live Oak and Coleman Sts.; City Council invites bids. Address The Mayor.

Tex., Paris.—Precinct 1 of Lamar county will construct 40 to 45 miles of rock roads; also build bridges; bids received until May 21; M. Hannah, engineer; W. F. Gill, secretary Road Commissioners; \$240,000 available. (See "Machinery Wanted.")

Tex., Palo Pinto.—Palo Pinto county, Precinct No. 1, defeated bond issue for road construction. Address County Commissioners. (Previously mentioned.)

Tex., San Benito.—City voted \$18,000 bond issue for street improvements; B. Frazier, City Secretary. (Recently mentioned.)

Tex., Terrell.—City will construct \$20,000 square yards of pavement and probably 60 per cent. as much of cement walks; amount available \$30,000; date for opening bids not determined; W. Irving Bean, Box 271, Terrell, engineer in charge. (Bond issue of \$20,000 recently noted voted.)

Va., Bowling Green.—Caroline county will probably vote in June on \$125,000 bond issue for road improvements. Address County Commissioners.

Va., Hanover.—Hanover county will construct 1½ miles gravel road from Henrico county line to Carneal's Store, in Hanover county; bids received until May 1; P. St. J. Wilson, State Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

Va., Portsmouth.—City will pave 30,000 square yards of roadway on certain streets of Seventh ward; concrete base and bituminous surface; bids received until April 23; D. F. Appenseller, chairman Seventh Ward Local Board; Bascom Sykes, Engineer. (See "Machinery Wanted.")

## SEWER CONSTRUCTION

Ala., Mobile.—City will construct vitrified pipe sanitary sewers through Virginia, Davis Ave. and St. Stephens road districts, aggregating 26,000 feet 8 to 24-inch pipe; bids received until May 14; Wright Smith, City Engineer. (See "Machinery Wanted.")

Ark., Texarkana.—City will sewer about 75 blocks at cost of \$15,000; date of opening bids not set; engineer in charge A. B. Matson, Texarkana. (Recently noted.)

Ga., Sylvester.—City, A. H. Pinson, Mayor, will construct partial sewer system; about three miles 8 and 12-inch; septic tank; bids received until 5 P. M. May 15; engineers, J. B. McCrary Company, Atlanta, Ga.; R. B. Pollard, City Clerk. (See "Water-works" and "Machinery Wanted.")



Md., Baltimore.—Board of Awards awarded contract at \$92,424.65 to James Ferry & Son, Chambersburg, Pa., to construct lateral sewers; require 14,000 linear feet vitrified pipe, 8 to 15 inches diameter, and 10,000 linear feet vitrified pipe house connections. (Call for bids lately noted.)

Md., Westernport.—City will lay sewer pipe along River Road St.; bids received until April 23; William Harvey, civil engineer; P. Curran, Mayor. (See "Machinery Wanted.")

Miss., Tutwiler.—City votes in May on \$13,500 bond issue for sewer and water purposes. Address The Mayor.

Mo., California.—City awarded contract to Inman & Burras, Kansas City, Mo., at \$11,350 to construct three miles tile sewer and three septic tanks.

Mo., Shelbina.—City awarded contract to T. C. Brooks & Sons Company, Jackson, Mich., at \$12,322, to construct lateral sewers.

Mo., St. Joseph.—City awarded contract to Land Construction Co. at \$27,486 to construct lower Whitehead sewer.

Mo., St. Louis.—City awarded contract to Olsen-Schmidt Construction Co. of St. Louis at \$14,338 to construct sanitary sewers in South Park.

Mo., St. Louis.—City will construct Gratiot joint district sewer and branches; bids received until April 19. Address Board of Public Improvements. (See "Machinery Wanted.")

N. C., Charlotte.—City awarded contract to Dabbs & Myers, Meridian, Miss., at \$37,883.80 to construct 9 miles sewers and drains; Joseph Firth, City Engineer. (Call for bids lately noted.)

N. C., Clinton.—City will construct several miles 8 to 12-inch sewers with manholes and flush tanks; plans prepared; William M. Platt, consulting engineer, Durham, N. C.

N. C., Winston (P. O. Winston-Salem).—City will vote again on \$85,000 bond issue for extension of sewer system; election previously reported declared illegal. Address The Mayor.

S. C., Cheraw.—City voted \$30,000 bond issue for sewer construction; D. L. Tillman, City Clerk. (Recently mentioned.)

S. C., Greenville.—City votes May 7 on \$35,000 bond issue to extend sewer system; W. C. Beacham, Mayor pro tem. (Recently mentioned.)

Tex., Lawrence.—City voted \$17,500 of sewer bonds. Address The Mayor.

Tex., Pecos.—City awarded contract to C. W. Clayton of Pecos to construct drainage system; contract calls for laying 4500 feet drainage tiling and accessories.

Tex., San Benito.—City voted \$30,000 bond issue for sewer construction; B. Frazier, City Secretary. (Recently mentioned.)

### TELEPHONE SYSTEMS

Ala., Seale.—Company organized with B. G. Jennings, president, and L. J. Lewis, secretary-treasurer, to construct telephone system; 30 stations; long-distance connection with Southern Bell Telephone & Telegraph Co.'s system.

Ark., Little Rock.—Southwestern Telephone & Telephone Co., E. S. Bloom, second vice-president, Bank of Commerce Bldg., St. Louis, Mo., contemplates, it is reported, expending \$5,000,000 in Arkansas during next three years for telephone extensions and improvements. (See Mo., St. Louis.)

Ga., Cussetta.—Company organized with J. P. Stevens, president-general manager, to construct telephone system; about 12 stations; long-distance connection with Southern Bell Telephone & Telegraph Co.'s system.

La., Roanoke.—Roanoke Farmers' Telephone Co., capital stock \$7000, incorporated; J. M. Boze, president; T. F. Clayton, vice-president; E. E. McMillan, secretary-treasurer.

Mo., St. Louis.—Bell Telephone Co. of Missouri, E. S. Bloom, second vice-president, Bank of Commerce Bldg., contemplates, it is reported, expending \$3,000,000 in Missouri this year for improvements, including central offices with telephone equipment, extension of underground cables and conduits, additional aerial cables and extension of present long-distance service; further reported that, in addition to expenditures in Missouri, Bell Telephone companies of Oklahoma, Arkansas and Texas will expend about \$10,000,000 for improvements and extensions; these companies are controlled by American Telephone & Telegraph Co. (See Ark., Little Rock.)

N. C., Concord.—Tulsa Telephone Co., capital stock \$10,000, incorporated by G. J.

Gouger, C. T. Allison, W. D. Goodnight and others.

Okla., Grant County.—Caldwell Southeastern Telephone Co. incorporated by S. P. Niswander, C. W. Wogoman, J. R. Elmore, P. J. Bohan, all of Caldwell, Kans., and others.

Okla., Marlow.—Marlow & Big Beaver Telephone Co., capital stock \$1000, incorporated by Hurley Peters, C. D. Julian, B. C. Hockenbury and W. H. Dunn.

S. C., Bethune.—Bethune Telephone Co. (recently noted incorporated with \$1000 capital stock by H. H. Holder and others) will construct five-mile telephone line. (See "Machinery Wanted.")

Tenn., Cookeville.—Dotson Branch Home Telephone Co., Route 8, Howard Grimsley, secretary, will construct about 15 miles trunk and 30 miles individual lines. (See "Machinery Wanted.")

Tenn., Knoxville.—East Tennessee Telephone Co., W. K. Boardman, division superintendent, will erect telephone exchange and lay underground conduits for wires; entire system will be changed from magneto type of equipment to common battery system. (Recently reported to install common battery switchboard in main exchange on Vine Ave.)

Tex., Bryan.—Bryan Telephone Co. will expend \$30,000 for improvements, including switchboard with flashlight system; purchased two-story brick building; will enlarge and remodel according to plans by Prof. F. E. Gleesocke of Agricultural and Mechanical College.

Tex., Del Rio.—Comstock & Langley Telephone Co., capital stock \$2000, incorporated by Robert W. P. Rosser, L. Rust and W. H. Dodd.

W. Va., Ceredo.—Millcreek Telephone Co. (William Ferguson, William Hoback and others) applied for franchise to construct telephone system.

W. Va., Parkersburg.—Bell Telephone Co. will extend and improve telephone system; cost \$15,000.

### TEXTILE MILLS

N. C., Albemarle.—Hosley.—Lillian Knitting Mill Co. will build three-story 50x60 foot addition; brick; mill construction; contract awarded. (Recently mentioned.)

N. C., Cornelius.—Cotton Goods.—R. J. Stough is reported as planning erection of cotton mill.

N. C., Concord.—Cotton Yarns.—Roberta Manufacturing Co., P. M. Keller, manager, will rebuild mill burned last year; install about 2000 spindles.

N. C., Hope Mills.—Cotton Yarns.—Hope Mills Manufacturing Co. writes to Manufacturers Record: "Increase in stock is to provide additional working capital and make certain plant improvements, plans for which are not yet complete." (Recently noted as increasing capital stock by \$150,000.)

N. C., Lumberton.—Cotton Yarns.—Jennings Cotton Mills will add 2000 spindles, 16 cards, etc.; has awarded contract; present equipment is 8000 ring spindles, etc.

N. C., Marion.—Cotton Cloth.—Marion Manufacturing Co. will build four-story 132x150-foot addition of mill construction, with tar and gravel roof; award contract next week; install 25,000 spindles, 600 looms, bobbins, 42x48 Corliss engine, etc.; all machinery ordered except engine; building and machinery cost about \$500,000; engineer in charge, J. E. Sirrine of Greenville, S. C. (This supersedes recent report, plans having been changed.)

N. C., Mayesworth.—Cotton Yarns.—Mayes Manufacturing Co. will install 10 cards, 5 speeders, 4 combers, 1 ribbon lap machine, 28 spinning frames, 8 twistlers, 5 spoolers and 2 reels; has awarded contract; has begun erection of warehouse and operatives' cottages.

N. C., Rockwell.—Cotton Yarns.—Barringer Manufacturing Co. will add 3000 spindles; now has 3000 ring spindles.

S. C., Darlington.—Print Cloth.—Darlington Manufacturing Co. has 1400 looms, 600 being narrow automatic looms; will change old-style looms as rapidly as possible; has taken out 200 36-inch looms and ordered 200 40-inch looms; new looms to have attachments for making fancy fabrics; engineer in charge, J. E. Sirrine of Greenville, S. C. (Recently reported as to install automatic looms.)

Tenn., Chattanooga.—Aseptic Cotton.—Southern Aseptic Cotton Co. organized; Robert T. Cameron, president; Edward E. Jenkins, manager; has installed experimental machinery and ordered equipment for permanent plant; manufacture absorbent cotton and absorbent cotton gauze.

Va., Roanoke.—Cotton Twine, etc.—Twine Mills Corporation will add 3000 spinning spindles; contract awarded.

W. Va., Grafton.—Woolen Goods.—Webster Woolen Mills Co. plans to increase capital.

### WATER-POWER DEVELOPMENTS

Ky., High Bridge.—Arthur Giesler, Dayton, O., engineer in charge for Dix River Power Co. (L. B. Herrington, president, Richmond, Ky.), wires Manufacturers Record: "Plant details not definitely settled; approximate horse-power 15,000; head 175 feet; powerhouse attached to dam; latter of concrete; storage basin 26 miles long." Mr. Herrington writes to Manufacturers Record: "Total cost of development will be \$2,000,000; cement dam about 200 feet high, 600 feet wide at crest and 250 at base; date for opening construction bids not determined." (Company's organization, etc., lately reported.)

Mo., Branson.—Ozark Water & Power Co., Holman & Laird, consulting engineers, Chemical Bldg., St. Louis, Mo., contemplate development of another water-power site, on White River, within two years; all contracts awarded for first hydro-electric plant developing 15,000 horse-power. (Details of first development heretofore reported.)

N. C., Morganton.—Citizens' Light & Power Co., Lenoir, N. C., advises Manufacturers Record that Northern company is negotiating for its property and planning to construct hydro-electric plant, developing 3000 horse-power, on Catawba River near Morganton; engineer, H. L. Milliner of Morganton Water Co.

N. C., Thelma.—Virginia-Carolina Power Co. has not as yet matured plans to construct hydro-electric plant on Roanoke River; will develop about 18,000 horse-power; total cost of plant, \$1,250,000; main offices at Richmond, Va., William C. Whitner of Richmond and Rock Hill, S. C., president and engineer in charge. (Previously reported proposed.)

Okla., Muskogee.—Muskogee Water-Power Co. organized with V. N. Sayer as president.

S. C., Catechee.—Norris Cotton Mills Co. contemplates enlarging dam and installing hydro-electric plant.

Tenn., Parksville.—Tennessee Railway, Light & Power Co., Nashville, Tenn., will organize Tennessee Power Co. to hold and develop its water-power properties; has 20,000 horse-power developed on Ocoee River near Parksville; will at once add 15,000 horse-power; construct No. 2 plant for 16,000 horse-power; has No. 3, capable of 30,000 horse-power; has Great Falls on Caney Fork River, capable of 80,000 horse-power; has 148 miles transmission lines and will add 272 miles; Tennessee Railway, Light & Power Co. issues \$3,750,000 preferred stock and \$7,500,000 common stock, while Tennessee Power Co. issues \$7,500,000 bonds; capitalization provides \$2,478,000 for constructing second hydro-electric plant on Ocoee River, extending transmission wires to phosphate field, installing substations, etc.; engineers, H. M. Bylesby & Co., 206 La Salle St., Chicago, Ill. (Organization, plans, properties acquired, etc., recently reported.)

Tex., Austin.—City Water Power Co. chartered with \$200,000 capital stock to acquire and complete Wm. D. Johnson's contract (from city) to construct concrete dam and enlarge lighting and power plant; president, H. B. Freeman, Jr., Hartford, Conn.; secretary, Chas. F. Roberts, New Haven, Conn.; engineer in charge and Austin manager, Frank S. Taylor. (City's award of this contract previously reported.)

### WATER-WORKS

Ark., Brinkley.—Brinkley Light & Water Co. will improve plant; engaged Richard C. Huston, 1634 Exchange Bldg., Memphis, Tenn., as engineer.

Ga., Columbus.—City will expend \$450,000 to construct water-works; 4,000,000 gallons capacity; construct pumping station, reservoir and filter plant; date of opening bids not set; J. L. Ludlow, engineer, Winston-Salem, N. C.; L. H. Chappell, Mayor. Recently noted to vote August 10 on \$350,000 bond issue.)

Ga., Cuthbert.—City will improve and enlarge water and light plant; cost \$20,000. Address The Mayor.

Ga., Griffin.—City will construct reservoir; concrete; capacity 750,000 gallons; cost \$4000 to \$6000. Address The Mayor.

Ga., Macon.—City will construct auxiliary pumping plant near present plant; capacity 7,000,000 gallons; Engineer Langworthy will prepare plans; W. H. Fetner, chairman Water Commission. (Recently mentioned.)

Ga., Monticello.—City votes May 6 on \$8000 bond issue for water-works. Address The Mayor.

Ga., Sylvester.—City, A. H. Pinson, Mayor, will make water-works improvements and construct partial sewer system; former includes air compressors, brick pumproom additions and 4500 feet six-inch cast-iron pipe, with valves, hydrants and special fittings; bids received until 5 P. M. May 15; engineers, J. B. McCrary Company, Atlanta, Ga.; R. B. Pollard, City Clerk. (See "Machinery Wanted.")

La., Covington.—City votes May 14 on \$60,000 bond issue for water-works. Address The Mayor.

Md., Baltimore.—City receives new bids until April 24 for furnishing and installing complete system of underground feeders from high-pressure pumping station, South St., to courthouse, city hall and two city hall annexes; recently mentioned; C. E. Stubbs, Building Inspector. (See "Machinery Wanted.")

Miss., Ackerman.—City contemplates issuing \$15,000 of bonds to complete water-works and erect addition to school building. Address The Mayor.

Miss., Crystal Springs.—City will improve water-works and electric-light plant; issue \$10,000 bonds. Address The Mayor.

Miss., Tutwiler.—City votes in May on \$13,500 bond issue for sewer and water purposes. Address The Mayor.

Mo., Pleasant Hill.—City voted bond issue to construct water-works; probably open bids by May 1 on following: 65,000-gallon tank on tower; (about) 1000 pumphouse with foundation; brick construction; install pumps, motor and engine; concrete 35-foot well, 16 feet across; \$25,000 to be expended; plans by Rollins & Westover, Kansas City, Mo.; S. N. Gordon, Mayor. (See "Machinery Wanted.")

Mo., St. Louis.—City will make changes in settling basins at Chain of Rocks; bids received until April 23. Address Board of Public Improvements. (See "Machinery Wanted.")

Mo., St. Louis.—City petitioned Government for authority to construct intake tower in Mississippi River; cost \$500,000. Address The Mayor.

N. C., Albemarle.—City awarded contract to Central Construction Co., Lexington, Ky., to construct water-works; system will include pumping station, 125-foot tank, 5 miles 6 to 10-inch pipe line, clear-water basin, deep-well pump, 2 motor-driven turbine pumps (250 G. P. M. each), etc.; Gilbert C. White, Durham, N. C., engineer in charge. (Call for bids previously noted.)

N. C., Greensboro.—City contemplates issuing \$100,000 water and street bonds. Address The Mayor.

N. C., Winston (P. O. Winston-Salem).—City will vote again on \$40,000 bond issue for extension of water mains and improvement of plant; previously reported election declared illegal. Address The Mayor.

Okla., Bokchito.—Town will complete deep well of 800 feet depth, 8 inches diameter; received bids until April 11; F. F. Long, chairman Town Trustees.

Okla., Pawhuska.—City awarded contract to Kennedy & Fleming, State National Bank Bldg., Oklahoma City, Okla., for furnishing and installing machinery and equipment for water-works and electric-light plant; to include three boilers, two 175-horse-power Corliss engines, two 125-kilowatt alternators, two 1,000,000-gallon high-duty pumping engines and two 1,000,000-gallon motor-driven centrifugal pumps. (Previously noted.)

Okla., Wagoner.—City will receive bids for complete light plant and extension of water-works, including pumps, engines, etc.; \$40,000 bond issue available; contract let in about 10 days; plans previously noted prepared by Benham Engineering Co., 714 Campbell Bldg., Oklahoma City, Okla.; John B. Cook, Mayor. (See "Machinery Wanted.")

S. C., Cheraw.—City voted \$47,000 bond issue for improvements to water-works, including laying 6½ miles mains; D. L. Tillman, City Clerk. (Recently mentioned.)

S. C., Rock Hill.—City will construct pipe line to secure additional water supply from Catawba River; \$22,000 available; will vote on \$50,000 bond issue. Address The Mayor. (Recently mentioned.)

Tenn., Covington.—City will lay 3500 feet additional four-inch mains. Address The Mayor.

Tex., Anson.—City Water & Light Co., capital stock \$10,000, incorporated by A. W. Johnson, J. A. Harris, B. F. Goodwin and J. W. Skinner. (Recently reported organized and to have leased water-works.)

Tex., Corpus Christi.—W. A. Fitch, president Corpus Christi Reservoir & Irrigation Co., advises Manufacturers Record he has

report from W. H. Rockwell and B. G. Sling, San Antonio, Tex., engineers who recently made examination of "Tule Lake Proposition;" has other engineers in field and is proceeding with general plans for organization of company and development of Tule Lake as reservoir for Corpus Christi water supply; L. R. Clarkson is secretary. (Proposed reservoir, etc., previously described.)

Tex., Corpus Christi.—City, Clark Pease, Mayor, contemplates installation of metal standpipe of 100,000 or 150,000 gallons capacity; reservoir plans, etc., recently noted. (See "Machinery Wanted.")

Tex., Port Lavaca.—Port Lavaca Manufacturing Co., capital stock \$50,000, incorporated; absorbs W. E. Shell company and will construct water-works; Willett Wilson, president; W. E. Shell, vice-president; H. C. Inala, secretary; J. H. Shell, general manager. (See "Machinery Wanted.")

Tex., Terrell.—City's improvements to water-works include extension of water mains; W. Irving Bean, Box 271, Terrell, engineer in charge. (Bond issue of \$25,000 recently noted voted.)

### WOODWORKING PLANTS

Ala., Greensboro.—Woodworking.—Straiton Bros. will rebuild plant reported burned; probably fireproof or mill construction; erection by company; install planing mill machinery, etc., to manufacture general housefurnishings and fittings.

Ark., Little Rock.—Handles.—C. L. Spivey, Denver, Col., contemplates building handle plant.

Ark., Pocahtontas.—Staves.—Grafton Stave & Heading Co., Grafton, Ill., contemplates establishing stave plant.

Md., Baltimore.—Wagons.—John C. Raum & Son, 303 S. Sharp St., awarded contract to Frederick Becker to erect building at 405 S. Sharp St.; three stories; brick and concrete; 25x50 feet; equipped for manufacturing wagons.

Miss., Hattiesburg.—Coffins and Caskets.—Ramsey Coffin & Casket Co. (W. H. Ramsey) will establish coffin and casket factory.

N. C., High Point.—Veneer.—Southern Veneer & Panel Co., capital stock \$50,000, incorporated by William G. Mangum, J. W. Clinard, R. R. Ragan and others.

N. C., Oxford.—Buggies.—Excelsior Seat Co., Columbus, O., purchased plant of Harris-Glen Body Co.; purchased four additional acres and will build factory.

Tenn., Greenville.—Chairs.—Tennessee Chair Co., capital stock \$50,000, incorporated by Joe C. Moore, E. P. Moore, W. C. Todd and A. C. Craig.

Tenn., Memphis.—Furniture.—Southern Mercantile Co., capital stock \$100,000, incorporated by W. K. Burton and E. P. Anderson of Memphis, H. W. German, Fort Worth, Tex., and H. A. Sorrels, Columbus, Miss.; will manufacture furniture, making specialty of patented kitchen cabinet.

Tenn., Memphis.—Bevel Siding.—Memphis Poplar Products Co. organized with F. J. Blackwell, president; R. A. Taylor, president-manager; George O. Friedel, secretary-treasurer; will manufacture bevel siding; work handled by George O. Friedel Lumber & Manufacturing Co. of Memphis; no machinery or additional buildings needed at present. (Recently noted incorporated with \$10,000 capital stock.)

Tex., Houston.—Boxes and Crates.—A. C. and L. C. Abell purchased for \$45,000 mills, machinery, etc., of Ed H. Harrall Lumber Co. and will expend \$10,000 to \$12,000 in improvements; plant will be operated as box and crate factory by Houston Co-operative Manufacturing Co., now at 2206-2210 Nance St.

W. Va., Warwood.—Veneers.—Veneer Manufacturing Co. will erect fireproof building.

W. Va., Bluefield.—Furniture.—Appalachian Furniture Co. will erect three-story brick furniture factory; site comprises 3½ acres. (Recently reported incorporated with \$50,000 capital stock by F. O. Barnes and others.)

### BURNED

Ala., Evergreen.—Evergreen Manufacturing Co.'s oil mill; loss \$30,000.

Ala., Greensboro.—Straiton Bros.' wood-working plant.

Ala., Roanoke.—Mrs. Nancy Fincher's residence; W. J. Snow's residence, owned by J. T. Shanks.

Ark., Success.—F. W. Sheffield's warehouse.

Fla., Orlando.—Southern Fertilizer Works.

Fla., Taft.—European Hotel.

Fla., Wauchula.—Wauchula Manufacturing Co.'s plant.

Ga., Dawson.—George A. Gibson's residence; loss \$4000 to \$5000.

Ky., Lewisburg.—S. S. Shelton's building; A. D. & J. D. Bule's store; Home Telephone Co.'s office; postoffice; loss \$5000.

Ky., Richmond.—Flat Rock Hotel; Louisville & Nashville Railroad's freight depot (W. H. Courtenay, chief engineer, Louisville, Ky.); Blanton & Congleton's lumber yards; loss about \$30,000.

Md., Baltimore.—Independent Brick Co.'s stable at Philadelphia Rd. and Debelius La., Highlandtown; loss \$10,000.

Md., Elkton.—James Holland's residence in Fourth district of Cecil county.

Mo., Carthage.—Tanger & Bresius' livery barn; loss \$30,000.

Miss., Corinth.—Webb Grocery Co.'s store; Corinth Furniture Co.'s store; loss \$5000.

Mo., Chilhowee.—J. O. Crabtree's store; loss on building, \$3000.

Fla., Micanopy.—R. W. Fontaine's store; E. C. Chitty's building.

N. C., Biscoe.—Biscoe Furniture Manufacturing Co.'s plant; loss \$30,000.

N. C., High Point.—Best Chair Co.'s plant; loss about \$30,000.

S. C., Bishopville.—Palmetto Oil Co.'s cotton gin; loss \$6000.

S. C., North Augusta.—Industrial Lumber Co.'s plant partially burned; loss \$70,000.

Tenn., Chattanooga.—Chattanooga Bakery; estimated loss \$15,000.

Tenn., Knoxville.—Bell Avenue Baptist Church at Jackson Ave. and Bertrand St., parsonage at 1905 Jackson Ave.; total loss \$29,000; L. T. McSpadden, chairman of finance committee.

Tex., Big Sandy.—Commercial Hotel.

Tex., Coahoma.—First State Bank building; loss \$30,000.

Tex., El Paso.—H. R. Carpenter's hospital; loss \$15,000.

Tex., Hamilton.—Hamilton public school; loss \$20,000. Address The Mayor.

Tex., Houston Heights.—H. D. Whiteside's auditorium on Ashland St., postoffice building and residence; loss \$34,000.

Tex., San Antonio.—Peden Iron & Steel Co.'s warehouse; loss \$9000.

Va., Appalachia.—Robnett & Green's store; Wesley Taylor's residence; loss \$15,000.

Va., Portsmouth.—Ancient Free and Accepted Masons' temple damaged.

Va., Roanoke.—Norfolk & Western Railway's foundry damaged; estimated loss \$5000.

W. Va., Beckley.—Rose & Turner's store, loss \$25,000; T. H. Kearne's hotel and restaurant, loss \$3000; John F. Burgess' store, loss \$10,000; W. L. Lloyd's restaurant, loss \$3000; Beckley Messenger Printing Co.'s building, loss \$5000; J. H. & J. M. Dunn's store, loss \$4000; Campbell's Hospital, loss \$10,000; W. M. Taylor & Co.'s store, loss \$20,000; Beckley Telephone Co.'s building, loss \$2000; J. R. Anderson's store, loss \$3000; Salem Sheehan's store, loss \$4000; Ray & Grass' store, loss \$4000; White Star Bakery, loss \$4000; R. S. Taylor's store, loss \$12,000; Independent Order of Odd Fellows' Hall, loss \$3000; Miss Mary Conway's store, loss \$4000.

### DAMAGED BY STORM

Mo., New Cambria.—Chicago, Burlington & Quincy Railroad Co.'s depot, T. E. Calvert, chief engineer, Chicago, Ill.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### APARTMENT-HOUSES

D. C., Washington.—Harry Wardman, 1432 New York Ave., will, it is reported, erect apartment-house at 14th St. and Fairmont Ave.; brick and stone; five stories; 16 three to six-room apartments on each floor; high-speed electric elevators; cost about \$250,000. Mr. Wardman wires Manufacturers Record: "Have not decided what will erect at 14th St. and Fairmont Ave.; can give particulars in ten days."

Fla., St. Petersburg.—Home Mechanics & Security Co. has plans for apartment and store building. (See "Stores.")

Md., Baltimore.—Mrs. Lennox Birkhead is having plans prepared by A. Lowther Forrest, 405 Hoffman Bldg., Baltimore, to remodel dwellings at 1203-05 N. Calvert St. into apartment-house; ornamental brick; terracotta and stone trimmings; four-story addition in rear; will install new floors, partitions, ceilings, electric elevator, vacuum-cleaning plant, hot-air heat, electric lights, etc.; cost \$25,000.

Md., Baltimore.—Mrs. Elizabeth Ellicott is having plans prepared by Ellicott & Emmart, Union Trust Bldg., Baltimore, for apartment-house at Charles and Read Sts.; eight stories; site 50x120 feet. (Recently noted.)

Mo., Kansas City.—J. B. Robinson will erect brick apartment-house at 3028 Garfield St.; cost \$3000.

Mo., Kansas City.—H. A. Bailey has plans by Otis Goddard, Kansas City, for apartment-house at 900-2-4-6 E. 29th St. and 2833-35 Campbell St.; three stories; 15 apartments; brick; cost \$50,000; construction by owner.

Mo., Kansas City.—W. B. Williams will erect brick apartment-house at 1015 Paseo St.; cost \$24,000.

Mo., Kansas City.—Robert Clark will erect apartment-house at 3417 Summit St.; brick; cost \$4000.

Mo., Kansas City.—F. E. Drake will erect apartment-house at 4243-45 Tracy St.; brick; cost \$3000.

Mo., Kansas City.—S. E. Swanson will erect brick apartment-house at 2712 Holmes St.; cost \$5000.

Mo., St. Louis.—Theodore Degenhardt Building & Contracting Co. will erect eight two-story double brick flats and five two-story eight-room brick residences in Carondelet; residences to have slate roofs, hardwood floors, etc.; total cost, \$76,000.

Mo., St. Louis.—J. Charles Mueller, 3509 Hebert St., has plans by Edward P. Nolte, 1101 Fullerton Bldg., for nine apartment-houses; 25x50 feet; ordinary construction; cost \$6500 each; cost of heating \$250; tar and

gravel roof; construction by owner. (Recently noted.)

Mo., St. Louis.—A. Frankman will erect three two-story tenement-houses at 4200-02 Arsenal St. and 3109-11 Blow St.; cost \$10,000.

Mo., St. Louis.—Pendleton Investment Co. will erect three-story tenement-house at 5904 Julian St.; cost \$20,000.

Mo., St. Louis.—Hackman Real Estate Co. will erect five two-story tenement-houses; cost \$25,000.

Mo., St. Louis.—W. H. Bruggemann will erect two-story tenement-house at 3610 McDonald St.; cost \$4000.

Mo., St. Louis.—William Degenhardt will erect seven double flats of three rooms and bath each and two single flats of four and five rooms each; cost \$50,000.

Mo., St. Louis.—J. H. Kohring will erect four two-story tenement-houses on Farlin St.; cost \$15,200.

Mo., St. Louis.—C. C. Stewart will erect four two-story tenement-houses; cost \$24,000.

Mo., St. Louis.—Dorris Investment Co. will erect three-story tenement-house at 609 Hamilton St.; cost \$25,000.

Mo., St. Louis.—J. A. Campen will erect two-story tenement-house at 1120 Euclid Ave.; cost \$5000.

Mo., St. Louis.—Highley Bros. will erect two four and five-room single flats; brick porches; tile baths; cost \$10,000.

Mo., St. Louis.—Jesse Morris Real Estate Co. will erect two two-story dwellings at 3146-48 Fortis St.; cost \$6400.

Mo., St. Louis.—Hy. Luehrmann will erect two two-story tenement-houses at 3437-39-45 Iowa St.; cost \$10,250.

Mo., St. Louis.—M. J. Crawford will erect two-story tenement-house at 4724 St. Louis St.; cost \$5000.

Mo., St. Louis.—J. J. Murphy will erect five two-story tenement-houses at 1229 to 1233 Suburban St. and 6123-32 Plymouth St.; cost \$16,900.

Mo., St. Louis.—Adlake Realty Co. will erect three two-story tenement-houses at 2335-37 Harris St.; cost \$12,000.

Mo., St. Louis.—P. F. Gruel will erect two-story tenement-house at 3432 Virginia St.; cost \$34,000.

Mo., St. Louis.—A. F. Schneider will erect two-story tenement-house at 3152 Neosho St.; cost \$4000.

Mo., St. Louis.—P. F. Busack will erect two-story tenement-house at 3554 Natural Bridge; cost \$5000.

Mo., St. Louis.—W. H. Humes will erect three-story tenement house at 5841 Nina St.; cost \$9000.

Tenn., Memphis.—S. M. Williamson will erect garage and apartment-house. (See "Motors and Garages.")

Tex., Dallas.—N. M. Harper will erect apartment-house at 4910 Victor St. to cost \$5000, and residence at 4910 Crutcher St. to cost \$2500.

Tex., Dallas.—Myers & Hines will erect brick veneer flat at 4914 Victor St.; cost \$10,000.

Tex., Dallas.—Dr. W. H. Echols will erect apartment-house at 2228 Griffin St.; cost \$5000.

Va., Richmond.—Williams & Cease organized company to erect apartment-house on Boulevard; is having plans prepared by Carneal & Johnson, Richmond; cost \$100,000.

### ASSOCIATION AND FRATERNAL

Fla., Ocala.—Benevolent Protective Order of Elks, H. M. Hampton, exalted ruler, will issue \$20,000 of bonds to erect lodge building.

Okla., Enid.—Benevolent Protective Order of Elks will, it is reported, erect lodge building; cost about \$10,000; H. G. McKeever and Clarence Kline, committee.

D. C., Washington.—Young Women's Christian Association, 12th and F Sts. N. W., Mrs. William Hamilton Bayly, president, purchased site at 13th and I Sts. N. W.; will erect building; cost about \$250,000.

Tex., El Paso.—Ancient Free and Accepted Masons will receive bids to erect temple.

W. Va., Bluefield.—Ancient Free and Accepted Masons are having plans prepared by Miller & Mahood, Roanoke, Va., for temple; four stories; first two floors for stores and offices; upper floors for lodgerooms; cost \$40,000 to \$50,000.

### BANK AND OFFICE

Ala., Georgiana.—Farmers and Merchants' Bank, T. L. Rose, president, will expend \$4300 on bank building; plans by Frederick Ausfeld, Montgomery, Ala. (Recently noted.)

Ala., Selma.—O. M. Cawthon will erect office building at Alabama and Lauderdale Sts.

D. C., Washington.—M. A. Winter, Winter Bldg., and George W. Faris have plans by Gregg & Lisenring for addition to building on U St., between 15th and 16th Sts.; 58x100 feet; white marble front; Corinthian design portico; steel and buff brick; first floor and half of second floor for postoffice station; cost \$50,000.

D. C., Washington.—George E. Myers is having plans prepared by Wood, Donn & Deming, 808 17th St. N. W., Washington, for office building on 15th St. N. W.; reported as to be 11 stories; 60x140 feet; probably white stone front; architects wire Manufacturers Record: "Details not yet determined."

Fla., Lawtey.—Lawtey State Bank, H. C. Peace, cashier, will receive bids until April 23 to erect bank building, vault and storeroom; specifications and other data on application.

Ga., Atlanta.—Jake H. Hirsch will probably erect office building on Luckie St.

Ga., Atlanta.—Atlanta Realty Corporation, Joel Hurt, president, opens bids about June 1 to erect office building recently mentioned; 60x200 feet, irregular; fireproof construction; vacuum system heating plant; building cost, without mechanical equipment, \$1,000,000; architect, J. E. R. Carpenter, 1 Madison Ave., New York.

Ga., Savannah.—Chatham Bank will expend \$50,000 to erect bank; one story and mezzanine; fireproof construction; steam heat; cement sidewalks; slag roof; plans by Mowbray & Uffinger, 56 Liberty St., New York; George C. Ransom, supervising architect, care of Chatham Bank; date of opening bids not determined. (Previously noted.)

Ga., Soperton.—Bank of Soperton will receive bids until May 1 to erect two-story bank, store and office building; 32.6x100 feet; brick, marble, concrete and steel; plans by I. P. Crutchfield, Vidalia, Ga.

Ky., Frankfort.—United American Insurance Co. will, it is reported, erect office building on Main St.; seven stories; steel and concrete; 50x100 feet.

Ky., Louisville.—German Bank, P. Vigilini, president, is considering tentative plans for bank building at 5th and Market Sts.; two stories; cost \$40,000 to \$50,000.

Ky., Mayfield.—W. A. Usher and Ed Gardner will erect office building at 8th St. and Broadway; two stories; brick.

La., Morgan City.—People's State and Savings Bank will erect bank building on Railroad Ave.

La., Morgan City.—People's State and Sav-



ings Bank will erect building; 30x60 feet; fireproof construction; electric lighting; cost \$5,000.

La., Oak Grove.—Bank of Oak Grove will rebuild bank and store building; 56x70 feet; fireproof construction; tin roof. (Recently reported burned.)

Md., Cumberland.—First National Bank will expend about \$50,000 to remodel bank building; will construct new vault, new front, lower first floor to within one step of street grade, etc.

Miss., Meadville.—Bank of Franklin, F. F. Becker, president, will erect bank building; three stories; brick.

Miss., Meadville.—Franklin County Deposit Bank, Haddin Adams, president, Prairie, Miss., will erect bank building; two stories; brick.

Mo., St. Louis.—Rex Amusement Co. will erect theater, store and office. (See "Bank and Office.")

Mo., St. Louis.—Hanover Realty & Power Co., incorporated by C. W. Wall and others, is holding company for building to be erected at Vandeventer Ave. and Olive St. (See "Stores.")

N. C., Raleigh.—Citizens' National Bank is having plans prepared by P. Thornton Marye, Atlanta, Ga., for bank and office building at Fayetteville and Martin Sts.; 35x50 feet; 11 stories; 100 offices; Italian style; total height 150 feet; electric elevators, with special elevators running to three vaults in basement; lower floor granite; two upper floors glazed terra-cotta; intermediate floors white glazed brick; cornice finished in terra-cotta; granite columns; tile floor in bank; entrance to vaults from marble and bronze stairway; fireproof; metal doors and windows; special water system; vacuum cleaners; cost \$200,000 to \$300,000. (Recently noted.)

S. C., Lexington.—Bank of Western Carolina, R. D. Smith, manager, will erect bank building on Main St.

S. C., Rock Hill.—Mrs. D. Hutchison will expend \$12,000 to \$15,000 to erect store and office building recently noted; 80x100 feet; ordinary construction; two stories; pressed brick; stone trimmings; plate glass fronts; prism glass set in copper bars; tile vestibules; second floor for offices, lounge-room and bathrooms; double stairway, back and front; composition roof; plans by J. S. Starr, Rock Hill. (See "Machinery, etc., Wanted.")

Tenn., Memphis.—J. W. Falls and associates are reported as to erect building on Madison Ave.; six stories; cost \$100,000.

Tenn., Memphis.—W. H. Reid is reported as considering erection of building at Court Ave. and Front St. for physicians; 16 stories; brick, stone, concrete and tile; cost \$200,000.

Tex., Jacksonville.—First National Bank will erect bank building.

Va., Roanoke.—George H. P. Cole engaged A. L. Marshall to superintend erection of bank building; 25x95 feet; ordinary construction; vacuum heating system; electric lighting; slag roof; cost \$10,000; plans by Miller & Mahood, Roanoke. (Recently noted.)

Tex., Vernon.—J. E. Lutz will erect store and office building; three stories.

W. Va., Bluefield.—Ancient Free and Accepted Masons are having plans prepared by Miller & Mahood, Roanoke, Va., for office, store and lodge building. (See "Association and Fraternal.")

## CHURCHES

Ala., Decatur.—First Methodist Church, Rev. J. W. Newman, pastor, will erect annex to edifice.

Ala., Tuscaloosa.—Methodist congregation has plans by R. H. Hunt, Chattanooga, Tenn., for edifice; seating capacity 1000; cost \$45,000. Address J. I. Harrison. (Recently noted.)

Ark., Helena.—First Baptist Church will erect edifice; cost \$20,000. Address The Pastor, First Baptist Church.

Fla., Miami.—First Christian Church, Rev. J. S. Langdon, pastor, Deland, Fla., will erect temple.

Ga., Bainbridge.—Baptist congregation will expend \$20,000 to erect edifice; seating capacity 650; ordinary construction; hot-air or steam heat; electric lighting; slate roof; plans not definite; Carl W. Minor may be addressed. (Recently noted.)

Ga., Ocilla.—First Methodist Episcopal Church will expend \$15,000 to erect edifice; ordinary construction; 66x94 feet; press brick; stone trimmings; furnace heat; electric lighting; art glass; oak seating; metal roof; plans by Sayre & Baldwin, Anderson, S. C. (Recently noted.)

Ky., Lexington.—First Baptist Church will erect edifice; cost \$75,000. Address The Pastor, First Baptist Church.

Ky., Louisville.—Dr. J. B. Marvin, 4th and Magnolia Sts., may be addressed relative to erecting Sunday-school and parish-house; seating capacity 800; fireproof construction; cost \$50,000. (Recently noted.)

La., New Orleans.—Dr. Browne, local secretary of church extension board, will have plans prepared by Captain Hay, official architect, for Presbyterian Men's Union of New Orleans for church in Gentilly Ter.

La., New Orleans.—Presbyterian Men's Union of New Orleans has plans by Captain Hay, official architect, New Orleans, for edifice at Lakeview.

Md., Baltimore.—Walbrook Methodist Episcopal Church, North Ave. and 10th St., Rev. John R. Edwards, pastor, will erect edifice to replace present structure; stucco or stone; cost \$50,000; will also renovate parsonage; is having plans prepared by Stanislaus Russell, 2900 Clifton Ave., Baltimore.

Md., Baltimore.—Emmanuel Evangelical Lutheran Church is having plans prepared by A. Cookman Leach, 323 N. Charles St., Baltimore, for edifice at Edmondson Ave. and Warwick St.

Md., Baltimore.—Howard Park Methodist Episcopal Church, Rev. F. B. Hanson, pastor, Howard Park, contemplates erection of edifice.

Md., Bohemia Manor (not a postoffice).—St. Francis' Catholic Church is having plans prepared by J. & M. Kennedy, Wilmington, Del., for restoring edifice to replace original structure; cost \$10,000.

Tenn., Paris.—Christian church will erect edifice. Address The Pastor, Christian Church.

Tenn., Knoxville.—Bell Avenue Baptist Church, L. T. McSpadden, chairman of finance committee, will probably rebuild church and parsonage reported burned at loss of \$23,000.

Tex., Brownsville.—English-Speaking Catholic Church has plans by F. B. Gaenslen, San Antonio, Tex., for edifice; 123x67 feet; body of church 47x22½ feet; seating capacity 450 people; three arched entrances; two towers, one for baptistry, other for stairs leading to loft; brick; stone trimmings; tile roof; cost \$20,000.

Tex., Vernon.—Central Christian Church will erect edifice; cost \$12,000 to \$15,000. Address The Pastor, Central Christian Church.

## CITY AND COUNTY

Ala., Birmingham.—Jail.—Jefferson County Board of Revenue contemplates \$1,000,000 bond issue and has plans prepared for courthouse and jail. (See "Courthouses.")

Ala., Hamilton.—Jail.—Marion County Commissioners will erect jail; fireproof; cost \$15,000; bids opened May 1. Address proposals to Mack Pearce.

Ky., Manchester.—Jail.—T. J. Rawlings, chairman Board of Jail Commissioners, states date of opening bids to erect jail is pending decision of court relative to plans, etc.; dimensions 31 feet 3 inches by 39 feet 4 inches; Pauly Jail Building Co., St. Louis, Mo., prepared plans. (Recently noted to receive bids until April 1.)

Ky., Winchester.—Jail, etc.—Clark County Commissioners will erect jail and not courthouse as recently noted; call for bids will be advertised; J. H. Evans, County Judge.

Md., Baltimore.—Stable and Police Station. Board of Awards, James H. Preston, president, will receive bids until April 24 to furnish and erect stable at Carroll Park, and at same time to alter and repair Western Police Station; each bid to be left with Richard Gwinn, City Register, City Hall, and accompanied by certified check for \$500, payable to Mayor and City Council; drawings and specifications at office of Clarence H. Stubbs, Inspector of Buildings, City Hall.

N. C., Greensboro.—Police Station, Market, Opera-house, etc.—City contemplates issuance of \$25,000 of bonds to provide market, opera-house to seat 2000 people, erection of police station and firehouse. Address Mayor Murphy.

N. C., Granite Falls.—Hall.—Aldermen purchased site on Main St. and will erect town hall. Address Town Clerk.

N. C., Wadesboro.—Jail, etc.—Anson County Commissioners, H. B. Allen, chairman, will erect jail and courthouse. (See "Courthouses.")

N. C., Winston (P. O. Winston-Salem).—Hospital.—City will vote again on \$90,000 bond issue to erect hospital; similar issue previously noted voted declared illegal. Address The Mayor.

Okl., Nowata.—Bathhouse.—City is plan-

ning, it is reported, to erect public bathhouse. Address The Mayor.

S. C., Beaufort.—Library.—Town Council leased site for proposed library. Address Town Clerk.

Tex., Dallas.—Hospital.—City decided on pavilion plan for erection of proposed city hospital, for which \$100,000 bond issue has been sold; W. M. Holland, Mayor. (Previously noted.)

Tex., Houston.—Library.—Trustees of Colored Carnegie Library will receive bids until April 23 to erect two-story brick and stone building; plans and specifications at office of Orger Real Estate Co., 409½ Milam St.

Tex., Paint Rock.—Jail.—Concho County Commissioners will erect jail; cost \$10,000.

## COURTHOUSES

Ala., Birmingham.—Jefferson County Board of Revenue contemplates \$1,000,000 bond issue to erect courthouse and jail; has preliminary plans by H. B. Wheelock, Birmingham, for 10-story structure; fireproof; brick and steel. (Recently noted.)

Fla., Clearwater.—Pinellas county, C. W. Wiering, Clerk, will receive bids until May 7 to erect courthouse and jail; separate bids for steam heating, plumbing and electric wiring; certified check for \$4000 with courthouse bids; for \$1000 with jail bids; checks for 5 per cent. of bids with other proposals; all checks payable to S. S. Coachman, chairman of County Commissioners; plans and specifications at office of Mr. Wiering at Clearwater and office of architects, Willis R. Biggers, Tampa, Fla., and W. L. Love, Atlanta, Ga., or may be had on deposit of certified check for \$25, payable to architects. (Recently noted.)

Miss., Water Valley.—Yalobusha County Commissioners invite architects to submit plans and specifications May 1 for courthouse; building to be erected on old foundation; present walls used as far as practicable; J. G. McGowan, secretary building commissioners.

N. C., Wadesboro.—Anson County Commissioners, H. B. Allen, chairman, will erect courthouse and jail; slate roof; cost \$60,000 to \$80,000; plans not completed.

## DWELLINGS

Ala., Birmingham.—Roland L. Lide will erect three two-story frame residences at 1240-42-44 Seventeenth Ave. South; cost \$7500.

Ala., Birmingham.—Anglin-White Realty Co. will erect two-story frame residence; cost \$3000.

Ala., Birmingham.—W. H. Dewey will erect two two-story frame residences and one two-story brick veneer dwelling; cost \$12,000.

Ala., Montgomery.—Griffin Tatum will let contract within few days to rebuild residence; cost \$4000. (Recently reported burned.)

Ark., Little Rock.—Bracy-Beauchamp-Neimyer Real Estate Co. will erect one two-story brick and five two-story frame residences on Summitt Ave. and Johnson St.; cost \$20,000.

D. C., Washington.—E. T. Phillips, 945 Pennsylvania Ave. N. W., will erect residence at 2416 Shannon Pl. S. E.; cost \$24,000.

D. C., Washington.—Allard & Appleby, 707 G St. N. W., will erect seven two-story brick dwellings at 1341 to 1353 Shepherd St. N. W.; cost \$25,000.

D. C., Washington.—H. R. Howenstein, 1314 F St. N. W., will erect dwelling at 50 K St. N. W.; cost \$3250.

D. C., Washington.—Middaugh & Shannon, Colorado Bldg., will erect 17 dwellings at 925-27 9th St. N. W. and 901-13 K St. N. W.; two stories; cost \$50,000.

D. C., Washington.—C. C. Lightbown, 519 6th St. N. W., will erect residence at 3711 Keokuk St. N. W.; cost \$6000.

D. C., Washington.—Thrifty Building Co., Union Trust Bldg., will erect nine dwellings on Randolph St. N. W. and six on 7th St. N. W.; two stories; cost \$47,000.

D. C., Washington.—Clark Waggaman, 1124 Connecticut Ave. N. W., completed plans for two dwellings at 2122-24 Le Roy Pl.; three stories and basement; 16 rooms; four baths; colonial brick and stone.

D. C., Washington.—Charles D. Fowler, Washington Loan & Trust Bldg., will erect dwellings at 1751 to 1757 A St. S. E. (Mr. Fowler's address recently incorrectly noted.)

D. C., Washington.—Giles F. Hellprin, 2620 University Pl., will repair house at 1006 H St. N. W.; cost \$5500.

Fla., Jacksonville.—Henry Taylor will erect two-story brick veneer dwelling on Walnut St. between 5th and 6th Sts.

Fla., Lakeland.—C. W. Deen, president

First National Bank, is having plans prepared for residence on Success Ave.; cost \$10,000.

Fla., Milton.—W. T. Smith Sons Lumber Co., Birmingham, Ala., will erect 15 two-room and 15 three-room houses for mill hands. (See "Hotels.")

Fla., Miami.—N. L. Stevenson, Chicago, Ill., will erect winter residence.

Ga., Americus.—Mrs. D. T. Wilson will erect residence on College St. near Lee St.

Ga., Atlanta.—Pittman Construction Co. will expend \$4000 to erect dwelling; frame; hot-air heat; shingle roof; plans and construction by owner. (Recently noted.)

Ga., Atlanta.—Miss Florence C. Walker will erect three residences on Kuhn St.

Ga., Augusta.—T. I. Hickman will erect two-story stucco residence on Meigs St.; cost \$10,000.

Ga., Augusta.—Frank Rouse will erect two-story frame residence on Wrightboro Rd.; cost \$6000.

Ga., Augusta.—S. Lesser will erect two two-story stucco residences at Walton Way and Chaffee Ave.; cost \$10,000.

Ga., Savannah.—Jacob Kraft will erect store and dwelling. (See "Stores.")

Ga., Savannah.—H. Fehrenkamp will erect five two-story dwellings at 38th and Burroughs Sts.

Ky., Louisville.—Sophia Dauditel will erect frame dwelling at 1619 Chichester St.; cost \$3800.

Ky., Louisville.—C. C. Eblen will erect three brick dwellings at 2152-56 Sherwood Ave.; cost \$3500 each.

Ky., Paducah.—E. G. Boone will erect residence; two stories; brick; eight rooms.

La., Bogalusa.—Great Southern Lumber Co. is receiving bids to erect 30 additional dwellings.

La., New Orleans.—Mrs. John A. Morris will erect garage and addition to dwelling; cost \$1845.

La., New Orleans.—Ernest Leonard will erect two double cottages on Louisa St.; cost \$4000.

La., New Orleans.—George Cousins will erect single frame raised cottage at 7801 Poplar St.; cost \$5100.

La., New Orleans.—C. Smith will erect two-story frame dwelling on Audubon St.; cost \$3600.

Md., Baltimore.—A. F. Bosley, 428 Roland Ave., has plans for store and dwelling. (See "Stores.")

Md., Baltimore.—J. E. Lafferty, 11 E. Pleasant St., prepared plans for bungalow at Beulah Villas; one and a half stories; cost \$7000.

Md., Baltimore.—T. Milton Jones, 1806 Madison Ave., will erect 14 dwellings, each 14x50 feet, in 1100 and 1200 blocks Whitelock St., and on both sides of 2400 and 2500 blocks McCulloch St., each 13x50 feet; two stories; ornamental pressed brick; cost \$150,000; plans and construction by owner; all contracts awarded. (Previously mentioned.)

Md., Baltimore.—Piel Construction Co., 2441 Arunah Ave., will erect 45 dwellings in 2300 and 2400 blocks Harlem Ave. and Edmondson Ave. near Whitman Ave.; two stories; 24x40 feet; iron-spot brick; porch fronts; cement cellars and sidewalks; ordinary construction; steam heat; gas and electric lighting; slag roofing; cost \$3000 each; plans and construction by company.

Md., Baltimore.—Newbold & Son, Inc., 403 Calvert Bldg., are having plans prepared by Jacob F. Gerwig, Equitable Bldg., Baltimore, for five dwellings on Gorsuch Ave. near Kennedy Ave.; two stories; iron-spot brick; 14x45 feet; cost \$5500.

Md., Baltimore.—James Keelty, 330 Oliver St., has plans by Jacob F. Gerwig, Equitable Bldg., Baltimore, for 24 dwellings on Harlem Ave. near Dukeland Ave.; two stories; pressed brick; white marble trimmings; 15x45 feet.

Md., Baltimore.—Miss Cora Shaffer is having plans prepared by Henry J. Tinley, 312 N. Charles St., Baltimore, for dwelling at Hill Top Park; cost \$8000; contractors estimating are: Gladfelter & Chambers, Parkdale and Maryland Aves.; G. Walter Tovell, 329 Dolphin St., both of Baltimore.

Md., Baltimore.—Frank H. MacMullen is having plans prepared by Henry J. Tinley, 312 Charles St., Baltimore, for dwelling at Beulah Villas; cost \$4500; contractors estimating are: John A. Sheridan, 506 Maryland Telephone Bldg.; Harry W. Johnson, 312 Equitable Bldg., both of Baltimore, and Gustave Runge of Lauraville, Md.

Md., Baltimore.—Rufus Woods has plans for four stores and dwellings on Franklin

St. and four dwellings on Pine St. (See "Stores.")

Md., Eggleston, P. O. Stevenson.—R. Lancaster Williams will open bids April 20 to erect dwelling; 130x38 feet; electric lighting; plans by I. H. Fowler, 347 N. Charles St., Baltimore; contractors estimating are W. E. Harn, 213 N. Calvert St.; Blake & Engle, 301 Law Bldg.; Gladfelter & Chambers, Parkdale and Maryland Aves.; John Cowan, 106 W. Madison St., and R. Walter Tovell, Eutaw Pl. and Dolphin St., all of Baltimore. (Recently noted.)

Md., Montgomery County.—Dr. R. S. Woodward, president of Carnegie Institute of Washington, 16th and P Sts. N. W., Washington, D. C., has plans by Wood, Donn & Deming, 808 17th St. N. W., Washington, D. C., for residence; New England colonial style; stone and shingles; farmer's house, stable and garage in connection.

Md., Roland Park.—Mrs. Charles E. Doehm, 822 Carrollton Ave., Baltimore, Md., has plans by Walter M. Gieske, 66 Gunther Bldg., Baltimore, Md., for residence at Overhill and Keswick Rds.; white stucco on brick; red slate or tile roof; parquetry and tiled floors; hardwood trimmings; hot-water heat; cost \$20,000; contractors estimating are: Gladfelter & Chambers, Parkdale and Maryland Aves.; Edward Watters & Co., 532 St. Paul St.; J. J. O'Connor, 427 E. Lexington St.; J. J. Moylan, 117 E. Center St.; Willard E. Harn, 213 N. Calvert St., all of Baltimore, Md.; Roland Park Co., 408 Roland Ave., Roland Park. (Previously noted.)

Md., Roland Park.—Christian Ax, 209 Goodwood Gardens, is having plans prepared by E. L. Palmer, 408 Roland Ave., Roland Park, to enlarge and remodel residence; erect addition of stucco; concrete foundation; contractors estimating are: Gladfelter & Chambers, Parkdale and Maryland Aves., Baltimore, Md., and Roland Park Co., 408 Roland Ave., Roland Park.

Md., Roland Park.—Dr. Marshall B. West, 308 Ingleside Ave., will erect addition to and improve residence; two and a half stories; frame.

Md., Ruxton.—Julian Roszel, 108 E. Lexington St., Baltimore, Md., will erect residence; 10 rooms; mill construction; electric lighting; shingle roof; plans being prepared by Clyde N. Friz, Glenn Bldg., St. Paul St., Baltimore, Md.

Mo., Kansas City.—L. E. Swanson will erect stucco dwelling at 2712 Holmes St.; cost \$5,000.

Mo., Kansas City.—E. McD. Colvin will erect stone dwelling at 3614 Penn St.; cost \$11,000.

Mo., Kansas City.—Mrs. William Eazer will erect frame dwelling at 934 Fulton St.; cost \$3,500.

Mo., Kansas City.—Louis Jones will erect stucco dwelling at 3429 Coleman St.; cost \$6,000.

Mo., Kansas City.—John H. Moore will erect brick veneer dwelling at 27 W. 33d St.; cost \$4,000.

Mo., Kansas City.—C. B. Roushe will erect frame dwelling at 600 Winthrop St.; cost \$7,000.

Mo., Kansas City.—F. A. Berg will erect dwelling at 18 E. 57th St.; stucco; cost \$4,000.

Mo., Kansas City.—H. E. Colvin will erect residence at 3709 W. Prospect St.; brick; cost \$10,000.

Mo., Kansas City.—John Schaeke will erect dwelling; brick; cost \$6,000.

Mo., Kansas City.—F. A. Nolen will erect stucco dwelling at 3212 Bellefontaine Ave. and two stone veneer dwellings at 3030-32 E. 32d St.; cost \$12,000.

Mo., St. Louis.—Theodore Degenhardt Building & Contracting Co. will erect five residences. (See "Apartment-houses.")

Mo., St. Louis.—F. O. Hebel will erect stucco dwelling at 2211 E. 9th St.; cost \$5,000.

Mo., St. Louis.—J. William Imholz will erect two-and-a-half-story residence on Temple Pl.; slate roof; cost \$6,500.

Mo., St. Louis.—G. H. Ossing will erect two-story dwelling at 2212 Holly St.; cost \$7,000.

Mo., St. Louis.—Florence P. Hermann, 1026 Langdon St., has plans by George Hellmuth, 721 Olive St., St. Louis, for residence; 13 rooms; ordinary construction; cost of heating, \$1,500; gas and electric lighting; grand-fold sidewalks; slate roofing; cost \$15,000; also erect \$1,500 garage. (Recently noted.)

Mo., St. Louis.—Otto Oerter will erect two-story store and dwelling at 2367 Greer St.; cost \$36,000.

Mo., St. Louis.—William J. Seever will expend \$12,000 to erect five dwellings; 22x36 feet; ordinary construction; hot-water heat;

gas and electric lighting; plans and construction by owner. (Recently noted.)

Mo., St. Louis.—J. C. Lamping will erect two two-story dwellings at 5933-35 Theodosia St.; cost \$6,000.

Mo., St. Louis.—J. J. Murphy will erect two-story store and dwelling at 6123-25 Plymouth St.; cost \$7,000.

Mo., St. Louis.—H. A. Helsell will erect store and dwelling. (See "Stores.")

Mo., St. Louis.—H. B. White will erect four one-story dwellings at 5222-26-34-38 Alaska St.; cost \$6,800.

Mo., St. Louis.—F. W. Peters will erect residence on Westminster Pl.

Mo., St. Louis.—Charles H. Peters will erect residence on Westminster Pl.

Mo., St. Louis.—Edwin Nolte will erect four two-story dwellings at 4147 to 4153 Kosuth St.; cost \$16,000.

Mo., St. Louis.—F. L. Dittmeier will erect five one-story dwellings at 4271-73-91-93 Penrose St.; cost \$10,000.

Mo., St. Louis.—Samato Realty Co. will erect residence on Etzel Ave. between Belt and Clara Aves.; cost \$6,000.

N. C., Charlotte.—John M. Morehead will erect English Colonial dwelling; main hall 23x26 feet; cost \$50,000.

N. C., Gastonia.—Dr. and Mrs. C. E. Adams have plans by F. L. Bonfoey, Gastonia, for residence at Main Ave. and Broad St.; colonial style; 10 rooms; frame; concrete basement; 15-foot porches on front and either side, with pressed-brick columns; laundry, heating plant, etc., in basement.

Okl., Oklahoma City.—Stewart & Wilderson will, it is reported, expend \$15,000 to erect number of residences.

Okl., Oklahoma City.—A. J. Vance will erect residence near Oklahoma City.

Okl., Oklahoma City.—C. A. White will erect frame dwelling at 3132 W. 18th St.; cost \$4,000.

Okl., Oklahoma City.—L. D. Knight will erect dwelling at 3208 W. 18th St.; frame; cost \$4,000.

Tenn., Columbia.—W. C. Salmos will erect residence.

Tenn., Nashville.—Eugene Crutcher will erect residence at 1295 Sixteenth Ave.; cost \$4,000.

Tenn., Nashville.—C. W. Smith will erect dwelling at 1305 Sixteenth Ave.; cost \$5,000.

Tenn., Knoxville.—C. Aubrey Smith, New York, is having plans prepared by Baumann Bros., Knoxville, for residence on Kingston Pike; hall 19x34 feet; beam ceiling; Ingle nook; electric-light plant.

Tenn., Knoxville.—Bell Avenue Baptist Church will probably rebuild burned church and parsonage. (See "Churches.")

Tenn., Nashville.—Knights of Pythias, W. B. Fox, chairman of building committee, Nashville, Tenn., will erect 60 cottages at Ovoca near Tullahoma; cost \$600 to \$1,000 each.

Tenn., Nashville.—Joe Yowell is having plans prepared by Fletcher & Billis, Nashville, for two-story 10-room residence on West End Ave.

Tex., Dallas.—Central Congregational Church will erect two-story frame residence; cost \$5,000.

Tex., Dallas.—John R. Atkins will erect residence at 503 Windemere St.; cost \$6,000.

Tex., Dallas.—J. E. Turner will erect residence at 428 10th St.; cost \$6,500.

Tex., Dallas.—J. R. Eldridge will erect three residences at 211, 201 and 223 Mt. Clair St.; cost \$3,500.

Tex., Dallas.—Dr. Harris will erect residence on Gaston Ave.; cost \$3,800.

Tex., Dallas.—John Fay will erect residence at 5120 Victor St.; cost \$5,700.

Tex., Dallas.—M. C. Turner will erect residence at 315 Jefferson St.; cost \$3,100.

Tex., Dallas.—J. H. Smith will erect residence at 1601 Segar St.; cost \$4,000.

Tex., Dallas.—R. M. Warden will erect residence at 300 10th St.; cost \$4,000.

Tex., Dallas.—N. M. Harper will erect \$2,500 residence at 4910 Crutcher St. (See "Apartment-houses.")

Tex., Dallas.—T. S. Miller, Jr., will erect residence; nine rooms; brick veneer; cost \$10,000.

Tex., Goliad.—E. S. Cross will erect residence.

Tex., Houston.—Charles Thompson will erect 12-room residence on Elysian St.; cost \$4,000.

Tex., Houston.—W. M. Harper will erect two residences; 10 rooms; cost \$7,000.

Tex., Kingsville.—Mrs. H. M. King and R.

J. Kleberg are having plans prepared by Carl C. Adams and Carlton Adams, San Antonio, Tex., for residence on Santa Gertrudis Ranch; fireproof; reinforced concrete; Spanish style; inner court with fountain and tropical garden; three stories; cost about \$100,000. (Previously noted.)

Va., Roanoke.—H. H. Huggins will erect two-story frame dwelling; cost \$3,500.

Va., Lynchburg.—R. H. Stevens will erect residence on Rivermont Ave.; stucco; tiled roof; cost \$5,000.

Va., Lynchburg.—Clinton DeWitt, Jr., will erect stucco and tile residence at Rivermont and Columbia Aves.; cost \$10,000.

Va., Lynchburg.—Mrs. Virginia M. Roberts will erect residence on Memphis Ave.; stone; slate roof; cost \$4,000.

Va., Norfolk.—E. J. Rosenbaum will erect five double brick two-story frame dwellings on Griffin St.; cost \$7,000.

Va., Norfolk.—R. P. Denby will erect two brick residences at 103-05 Redgate Ave.; cost \$8,000.

Va., Norfolk.—Mrs. E. S. Gardner will erect brick and frame residence at Westover and Graydon Aves.; cost \$5,500.

Va., Richmond.—Dr. M. E. Nuckols will erect dwelling on Monument Ave. between Lombardy St. and Allen Ave.; two stories; brick; cost \$12,000.

Va., Richmond.—Mrs. Mary Richardson will erect detached two-story brick dwelling on Stuart Ave.

Va., Richmond.—Maude D. Cruicks will erect three-story-and-basement brick dwelling at 1721 Grove Ave.; cost \$7,500.

Va., Richmond.—Henry S. Wallerstein will erect three detached two-story frame dwellings on 23d St. between T and U Sts.; cost \$3,300.

Va., Richmond.—E. C. Woodward will erect detached frame dwelling at 2107 W. Main St.; cost \$4,200.

Va., Roanoke.—Exchange Building & Land Co. will erect two-story frame dwelling; cost \$4,500.

Va., Virginia Beach.—J. Elmer White will probably let contract to Charles H. Plummer, 328 Arcade Bldg., Norfolk, Va., to erect residence; 37x22 feet; mill construction; heating not decided; electric lighting; concrete sidewalks; slate roof; cost \$10,000. (Recently noted.)

## GOVERNMENT AND STATE

La., Slidell.—Postoffice.—J. F. Folk will erect building to be leased by Government for postoffice.

Md., Sykesville.—Asylum.—State is having plans prepared by Owens & Slaco, 1605 Continental Bldg., Baltimore and Calvert Sts., Baltimore, Md., for superintendent's home to replace burned Betsy Patterson mansion; wide wings; porches. (Previously noted.)

Md., Sykesville.—Hospital.—Managers of Springfield State Hospital for Insane have \$175,000 appropriation and will erect tuberculosis bungalow, building for epileptics, dining-room, kitchen, etc., and will rebuild Betsy Patterson Mansion, destroyed by fire. (Recently noted.)

Maryland.—Hospitals.—Governor Phillips Lee Goldsborough, Annapolis, Md., signed bill authorizing \$800,000 bond issue for improvements at State institutions as follows: \$200,000 to erect hospital on Eastern Shore; \$175,000 to erect Crownsville (Md.) Hospital, previously mentioned; \$175,000 to erect buildings at Springfield State Hospital at Sykesville, Md., recently noted; \$100,000 for buildings at Spring Grove State Hospital at Catonsville, Md.; \$150,000 for buildings at Rosewood State Training School.

Miss., West Point.—Postoffice.—Treasury Department, office of supervising architect, James Knox Taylor, Washington, D. C. Proposals received in this office until May 25 for construction (including plumbing, gaspiping, heating apparatus, electric conduits and wiring and interior lighting fixtures) of United States postoffice at West Point; building to be one story and basement; 4160 square feet ground area; brick faced; stone and terracotta trimming; tile roof; copies of drawings and specifications obtainable from office of custodian of site at West Point, or at this office, at discretion of supervising architect.

Mo., Mt. Vernon.—Sanatorium.—Managers of Missouri State Sanatorium will receive bids until May 4 to erect dairy barn and two concrete silos on sanatorium grounds; plans and specifications at offices of superintendent of sanatorium at Mt. Vernon; Bank Hotel, Aurora, Mo.; County Clerk, Springfield, Mo.; County Clerk, Joplin, Mo.; certified check for \$300, payable to W. L. Gupton, secretary.

Tex., Austin.—Home.—Board of Managers of Confederate Woman's Home will receive

plans and specifications until April 30 for addition and improvements to home; cost \$15,000; information furnished by superintendent. (Recently noted.)

Tex., Bonham.—Postoffice.—Treasury Department, Office of Supervising Architect, James Knox Taylor. Proposals received at this office until May 24 for construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring and lighting fixtures) of United States postoffice at Bonham; non-fireproof; one story and basement; about 4230 square feet ground area; brick faced with stone trimmings; to be constructed in accordance with drawings and specifications, copies of which may be obtained from custodian of site or at this office at discretion of supervising architect.

W. Va., Salem.—Home.—State Board of Control of West Virginia, Charleston, W. Va., will receive bids until April 30 for material and erection of dormitory at West Virginia Industrial Home for Girls; certified check for \$500; plans and specifications at offices of Wheeling Intelligencer, Wheeling, W. Va.; Dispatch News, Parkersburg, W. Va.; Daily Telegram, Clarksburg, W. Va.; superintendent of home at Salem; State Board of Control, Charleston, W. Va.

## HOTELS

Ala., Birmingham.—Tutwiler Hotel Co., George G. Crawford, president, will expend \$750,000 to erect hotel; 300 rooms; fireproof construction; architect not selected. (Company recently noted incorporated with more than \$1,000,000 authorized capital stock.)

Ala., Aliceville.—T. J. Duncan is reported as contemplating erection of hotel to replace burned structure; 30 rooms; brick. (Recently reported burned at loss of \$5,000.)

Ark., Hardy.—Camp Hardy Corporation, G. G. Buford, president, 1315 Memphis Trust Bldg., Memphis, Tenn., will erect hotel, etc. (See "Land Developments.")

Fla., Brooksville.—J. W. McDarmand awarded contract to R. L. Bracey, Brooksville, to erect hotel; 22 rooms; concrete.

Fla., Jacksonville.—H. R. Finn Realty Co. has plans by R. S. Slabee, Jr., Jacksonville, for hotel at Davis and Adams Sts.; five stories; brick and stone; 100 rooms; 100x100 feet; telephones in all rooms; hot and cold running water; construction under supervision of architect.

Fla., Milton.—W. T. Smith Sons Lumber Co., Birmingham, Ala., will erect 20-room and 15-room hotels; also 15 three-room and 15 two-room houses for mill hands; frame construction.

Fla., St. Petersburg.—E. E. Wintersgill will erect proposed hotel on bay front adjoining Boca Ceiga Park; 25 rooms; dining-room 28x60 feet; concrete veneer type; eight-foot porches; private electric-light plant; cost \$15,000.

Ga., Rome.—Wright Willingham, John M. Graham, E. P. Harvey and others are interested in erection of proposed hotel at Broad St. and Fifth Ave.; seven stories; cost \$250,000. Mr. Willingham wires Manufacturers Record: "Plans deferred to May 10, at which time will give full report; indications make proposition practical certainty."

Md., Claiborne.—Eastern Shore Development & Steamship Co., A. J. McIntosh, president, New York, will, it is reported, erect hotel, etc. (See "Miscellaneous Enterprises.")

Mo., St. Louis.—Nathan Brey will expend \$8000 to \$10,000 to alter Hotel Beer at 3901 Olive St.; will provide room for public assemblies, cafes, etc.; improve Olive St. entrance, erect additional entrance, etc.

N. C., Durham.—Special correspondent wires Manufacturers Record: Announced J. R. and Lee Paschall, Richmond, Va., will erect fireproof hotel; five stories; 194 rooms; 100x132 feet; brick and stone construction; cost \$175,000; contract May 1.

N. C., Carthage.—L. P. Tyson will expend \$6000 for repairs to burned hotel; three stories; mill construction; steam heat; electric lighting; metal roofing. (Recently noted.)

Tex., Port Arthur.—Otto Wahrmond of San Antonio, Tex., will erect hotel at Proctor and San Antonio Sts.; three stories; brick and steel.

Tex., Dallas.—Oriental Hotel Association will expend \$10,000 to remodel hotel at Commerce and Akard.

Va., Norfolk.—Atlantic Hotel Co. will make improvements to hotel; enlarge lobby, etc.

## MISCELLANEOUS

Ala., Foley.—Shed.—Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., will, it is reported, erect 180-foot extension to freight shed.

Ark., Jonesboro.—Fair.—Craighead County



Fair Association, H. M. Hencke, president, purchased 40-acre tract and will establish fair.

D. C., Washington.—Postoffice Station.—M. A. Winter and George W. Faris have plans by Gregg & Linsenring for addition to building on U St., between 15th and 16th Sts.; to be used as postoffice station, offices, etc. (See "Bank and Office.")

Fla., Lakeland.—Auditorium.—Lakeland Chautauqua Association is having plans prepared by H. L. Scott, Lakeland, for auditorium at foot of Main St.; pressed brick; seating capacity 1700; cost \$15,000. (Recently noted.)

Ky., Louisville.—Parish House.—Dr. J. B. Marvin, 4th and Magnolia Sts., chairman of building committee, Broadway Baptist Church, may be addressed relative to erecting parish-house and Sunday-school building recently noted. (See "Churches.")

Miss., Beauvoir.—Home.—Directors of Beauvoir Soldiers' Home will erect two six-room dormitories.

Mo., St. Louis.—Stable.—Papendick Bakery will erect two-story stable at 3500-16 Florissant St.; cost \$10,000.

Mo., St. Louis.—Market.—Swift & Co. will expend \$5000 to alter wholesale market at 310 S. 21st St.

Mo., St. Louis.—Clubhouse.—Midland Valley Country Club has preliminary plans by Althea Canter, 464 Laclede Ave., St. Louis, for clubhouse; lounging-rooms, fireplaces, shower baths; 16-foot porch, screened in summer and enclosed in winter; four doors, 10 feet wide, to open on porch.

N. C., Pinoc (not a postoffice).—Car Sheds. Piedmont Traction Co., Charlotte, N. C., will erect car sheds; 200x60 feet; tile roof; to have four tracks.

Tenn., Chattanooga.—Exhibit Rooms.—Chattanooga Manufacturers' Association, 823 Broad St., will expend \$8000 to erect exhibit rooms; 25x120 feet; four stories; mill construction; electric lighting; composition roof; plans by Huntington & Sears, 1203 James Bldg., Chattanooga, who may be addressed. (Recently noted.)

Tex., Houston.—Clubhouse.—Woman's Club, Mrs. W. A. Renn, president, will erect clubhouse.

Va., Norfolk.—Hospital.—Directors of King's Daughters Hospital will erect annex to hospital.

W. Va., Wheeling.—Car Barn.—Wheeling Traction Co. It is reported, will receive bids until April 20 to erect car barn and power-house. (See "Electric Plants.")

## RAILWAY STATIONS

Ala., Birmingham.—St. Louis & San Francisco Railroad, M. C. Byers, chief engineer of operations, Springfield, Mo., will, it is reported, erect freight station.

Fla., Lakeland.—Atlantic Coast Line Railway, E. B. Pleasants, chief engineer, Wilmington, N. C., will erect freight station at Kentucky Ave. and Pine St.; two stories; pressed brick; ornamental trimmings; long warehouse at rear of main part of building; transfer shed over 500 feet long; 50-foot space paved with brick.

Ga., Pelham.—Flint River & Northeastern Railroad, J. L. Hand, president, will receive bids until April 20 to erect brick and stone station; two stories; 48x200 feet; cost \$10,000.

Ky., Earlinton.—Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., will erect station; cost \$10,000.

Mo., Webb City.—St. Louis & San Francisco Railroad, M. C. Byers, chief engineer of operations, Springfield, Mo., will probably erect brick passenger station.

S. C., Rock Hill.—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave., Washington, D. C., will improve freight depot; erect agent's office, extend warehouse 60 feet on south, construct open shed of 30 feet, etc.

Tenn., Memphis.—Chicago, Rock Island & Pacific Railroad, J. B. Berr, chief engineer, Chicago, Ill., will, it is reported, erect freight depot.

Tex., Slaton.—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., will, it is reported, erect reading-room; cost \$30,000.

W. Va., Huntington.—Chesapeake & Ohio Railroad, F. I. Cabell, chief engineer, Richmond, Va., is reported as to erect \$10,000 passenger station.

## SCHOOLS

Ala., Elkmont.—Limestone County Commissioners, W. B. Vaughn, chairman finance committee, has plans by Frank Lockwood,

Montgomery, Ala., for county high school; 58x85 feet; two stories; brick and wood finish; electric wiring; cost \$8000 to \$9000; bids opened April 17. (Previously noted.)

Ark., Newport.—School Board will receive bids until May 1 to erect two-story school; plans and specifications at office of George R. Mann, architect, 335 Gazette Bldg., Little Rock, Ark., or may be had on deposit of \$25; E. L. Boyce, president of School Board.

Fla., Dania.—School Board selected site for proposed school; cost \$5000; R. E. Hall and J. M. Holding committee.

Fla., Tampa.—City is having plans prepared by Bonfoey & Elliott, Tampa, for school; 76x96 feet; ordinary construction; hot-air heat; cost \$30,000. (See "Machinery Wanted.")

Ga., Atlanta.—Ministerial Association of the Christian Church, Dr. H. T. Cree, president, Augusta, Ga., will establish college; has option on 300 acres of land.

Ga., Savannah.—Board of Education will receive bids until April 23 for construction (including plumbing) of public school at 37th and Habersham Sts.; plans and specifications from Wallin & Young, architects, Savannah.

Ky., Elkton.—Giles County High School Board, Pulaski, Tenn., will erect \$5000 high school. (See Tenn., Linnville.)

Ky., Lancaster.—City is having plans prepared by C. C. & E. A. Weber, Cincinnati, O., for graded school, for which \$29,000 bond issue was voted.

La., Columbia.—Bids received until May 9 by E. H. Turner, secretary, to erect school building according to plans and specifications by Xavier A. Kramer, Magnolia, Miss.; plans on file at office of secretary at Columbia and of architect, also at Contractors and Builders' Exchange, New Orleans, and obtainable from architect upon deposit of \$10; certified check for \$200.

La., Patterson.—School Board will expend \$40,000 to erect school; steam heat; electric lighting; composition roof; plans by Stevens & Nelson Co., New Orleans, La.; date of opening bids not set. (Recently noted under "Miscellaneous.")

La., New Orleans.—E. A. Christy, Municipal Architect, City Engineer's Department, City Hall, may be addressed relative to improvements to kindergarten buildings at Gayarre and Jefferson Davis schools. (Recently noted.)

Maryland.—Theodore Wells Pietsch, American Bldg., Baltimore, Md., prepared plans for State Normal School, for which Legislature appropriated \$600,000. (Recently noted.)

Miss., Ackerman.—City will issue \$15,000 of bonds to erect addition to school and complete water-works system. Address The Mayor.

Miss., Jackson.—Trustees of Institution for the Blind will erect school to cost \$6500.

Mo., Sugar Creek.—Sugar Creek School District voted \$12,000 bond issue for school improvements. Address District School Trustees.

Mo., Fayette.—Curators of Central College appropriated \$5000 to rebuild Centenary Chapel recently burned.

Mo., St. Louis.—St. Louis College of Physicians and Surgeons will reorganize and expend about \$50,000 for improvements.

N. C., North Wilkesboro.—Town voted bond issue to erect graded school building. Address The Mayor. (Recently noted.)

N. C., Warsaw.—Trustees of Warsaw high school will receive bids until April 27 to erect school; brick; 10 rooms and auditorium; plans and specifications at office of H. L. Stevens, chairman, Warsaw, and Burrette H. Stephens, architect, Wilmington, N. C.

N. C., Winston, P. O. at Winston-Salem.—City will vote again on \$80,000 bond issue for schools; similar bond issue previously reported voted declared illegal. Address The Mayor.

Okla., Ardmore.—Board of Education, G. H. Bruce, clerk, will receive bids until April 22 to erect three-story-and-basement brick and concrete high-school building; certified check for \$3500; plans, specifications, conditions, etc., at office of J. B. White, architect, Ardmore, obtainable on deposit of \$20.

Okla., Norman.—State Normal School is having plans prepared by Dawson, Kedan & Valeur, Muskogee, Okla., for law building as State University; has \$125,000 appropriation.

S. C., Florence.—Board of Trustees of South Carolina Industrial School will make additions to building; cost \$15,000; plans not made; C. L. Emmons, superintendent.

S. C., Florence.—Coker College trustees will probably erect dormitory to cost \$50,000.

Tenn., Columbia.—Board of Trade is promoting erection of high-school building; cost about \$50,000.

Tenn., Inskip.—Knox County Board of Education, Knoxville, Tenn., adopted plans by L. C. Waters, Knoxville, Tenn., for proposed consolidated school; will receive bids until April 26.

Tenn., Linnville.—Giles County High School Board, Pulaski, Tenn., will erect \$30,000 high school at Linnville and \$5000 high school at Elkton, Ky.

Tex., Back Creek.—School Board will erect school.

Tex., Chico.—Chico Free School District, E. W. Cooper, president of board, will receive bids until April 22 to erect brick school; certified check for \$400.

Tex., Decatur.—Texas Baptist Education Commission, Dr. A. J. Barton, secretary, Waco, Tex., is reported as to expend \$25,000 for improvements to Decatur Baptist College.

Tex., Denton.—City voted \$9000 bond issue to erect North Side school. Address The Mayor.

Tex., Floresville.—City will vote May 14 on \$20,000 bond issue to erect school. Address The Mayor.

Tex., Hamilton.—City will rebuild public school reported burned at loss of \$30,000. Address The Mayor.

Tex., Helbig, P. O. at Rosedale.—Helbig School District No. 5, Jefferson county, H. G. French, president, Box 532, Beaumont, Tex., will receive bids until April 22 to erect brick school; certified check for \$500; plans and specifications at office of J. T. Smith & Co., architects, third floor, 358 Alexander Bldg., Beaumont, or may be had on deposit of \$25.

Tex., Houston.—Dan C. Smith, Jr., City Secretary, City Hall, will receive bids until May 13 to erect addition to colored high school; two stories and basement; certified check for \$500, payable to order of H. B. Race, Mayor; plans, specifications, blanks, etc., at office of A. Delisle, architect, Levy Bldg., Houston. (Recently noted.)

Tex., Howland.—Howland School District voted \$10,000 bond issue to erect brick school. Address County Commissioners, Paris, Tex.

Tex., Houston Heights.—Houston Heights School District voted \$75,000 bond issue for school improvements to include 20 rooms divided at Harvard Street school, Cooley school and Eighth Street colored school, installation of heating plants at high school and other schools, sanitary improvement at various schools, etc. Address District School Board. (Previously noted.)

Tex., Jourdanton.—Jourdanton Independent School District trustees will soon award contract to erect proposed school; cost \$20,000.

Tex., Mertens.—Mertens Independent School District voted bond issue and tax to erect school; cost \$12,500.

Tex., Plantersville.—School Board will receive bids until April 25 to erect brick school; plans and specifications at office of board at Plantersville, and W. L. Strickland, architect, Conroe, Tex.

Tex., Reagan.—Reagan Independent School District voted bonds to erect school. Address District School Trustees.

Tex., Shiner.—Shiner School Board will receive bids until May 1 to erect school; certified check for \$550; plans and specifications at office of Louis Trautwein, president of board at Shiner, and Stephenson & Heldenfels, architects, Beeville, Tex., or may be had on deposit of \$10.

Va., Berkley, Station Norfolk.—Norfolk County School Board, Portsmouth, Va., selected site in Norfolk Highlands for proposed school; four rooms; brick; sewerage; hot-air heat; cost \$10,000; is having plans prepared by Lee & Diehl, Norfolk; 65x84 feet; two stories and basement; brick; gravel roof; bids will soon be advertised.

Va., Fredericksburg.—Grounds and Building Committee, State Normal and Industrial School for Women, will receive plans, specifications and bids for erection of residence for President E. H. Russell until April 30; frame construction; brick foundation; 10 or 11 rooms; two stories and cellar, with concrete floor; storeroom and bathrooms; hot-water heat; tin roof, well raised for ventilation; cost not to exceed \$7000; certified check for \$100; further information from P. J. White, chairman of committee, fourth floor, Room 38, Merchants' National Bank Bldg., Richmond, Va., and at office of president of school at Fredericksburg.

W. Va., Benwood.—Board of Education of Benwood Independent School District is considering election to vote on \$40,000 or \$50,000

bond issue to erect school to replace burned structure.

W. Va., Charleston.—Charleston Independent School District Board of Education will receive bids until April 25 for excavation and concrete foundation for addition to high school; plans and specifications after April 20 from George S. Laidley, superintendent; W. O. Daum, secretary.

W. Va., Moundsville.—School Board will expend \$65,000 to erect two schools; 76x90 feet and 86x154 feet; both two stories; semi-fireproof slow-burning construction; mechanical system of heating; gas and electric lighting; composition roof; plans by D. T. Burton, Moundsville. (Recently noted.)

## STORES

Ala., Birmingham.—L. S. Selman will erect three one-story frame buildings on Cotton Ave., West End; cost \$4760.

Ala., Birmingham.—J. L. Worthington will erect building at 2021 Avenue C; one story; brick; cost \$7500.

Ala., Birmingham.—H. B. Gray will erect nine one-story buildings at North Third Ave. and Mortimer St.; cost \$3600.

Ala., Birmingham.—D. A. Green will erect one-story brick building at 1709 Fourth Ave.; cost \$3200.

Ala., Gadsden.—Hagedorn & Echols have plans by D. O. Whildin, Birmingham, Ala., for building at Broadway and Court St.; two stories; foundation to support three additional stories; brick; frontage 50 feet.

Fla., Jacksonville.—George W. Russell will erect three-story brick building at Hogan and Orange Sts.

Fla., Jacksonville.—William Burbridge will erect two-story brick building at State St. and Myrtle Ave.

Fla., St. Petersburg.—Home Mechanics & Security Co. has plans by Edgar Ferdon, St. Petersburg, for store and apartment building; four stories and basement; fireproof; steam heat; elevator; cost \$30,000; date of opening bids not fixed.

Ga., Savannah.—Jacob Kraft will erect two-story dwelling and bakery at Jefferson and Duffy Sts.

Ga., Savannah.—Ensel, Vinson & Hirsch have plans by H. W. Witover, Savannah, to remodel store building; will construct 150 running feet of show windows, etc.

Ga., Soperton.—Bank of Soperton will receive bids until May 1 to erect bank, office and store building. (See "Bank and Office.")

Ky., Bowling Green.—William Walters will erect business building to contain five stores; pressed brick.

La., Oak Grove.—Bank of Oak Grove will rebuild store and bank building recently reported burned. (See "Bank and Office.")

Md., Baltimore.—Robert Kinnier, 413 W. Fayette St., has plans by Callis & Callis, 2000 St. Paul St., Baltimore, for carriage repository at 415 W. Fayette St.; brick; stone trimmings; slag roof; five stories.

Md., Baltimore.—Rufus Woods has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, for four stores and dwellings on Franklin St.; 16x70 feet; three stories; also four dwellings on Pine St.; two stories; 13x30 feet each; cost \$30,000; contractors estimating are R. H. Frazier & Sons, Law Bldg.; Thomas L. Jones & Sons, 410 W. Saratoga St., and Preston & Ford, Knickerbocker Bldg., all of Baltimore.

Md., Baltimore.—A. F. Bosley, 428 Roland Ave., has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, for store and dwelling; 16x60 feet; brick; steam heat; gas and electric lighting; tin roofing; address architect.

Miss., Aberdeen.—S. Schwab will erect business building; two stories; brick; plate glass front.

Miss., Aberdeen.—Dr. J. W. Eckford will erect three-story brick store at Commerce and Meridian Sts.

Miss., Corinth.—J. O. Liddon will repair store occupied by Corinth Furniture Co. reported burned; 25x33 feet and 50x33 feet; ordinary construction; metal roofing; iron front; metal ceilings; architect not employed.

Mo., Kansas City.—S. Z. Schutte will erect mercantile building at 16th St. and Grand Ave.; six stories.

Mo., St. Louis.—J. J. Murphy will erect store and dwelling. (See "Dwellings.")

Mo., St. Louis.—Henry A. Fedder will erect store building; cost \$5000.

Mo., St. Louis.—Shepley Estate will expend \$11,000 for improvements to store building at Broadway and 10th St. for M. J. Sternberg Hat & Fur Co.



Mo., St. Louis.—H. A. Heisell will erect two-story store and dwelling at 400 Tennessee St.; cost \$4000.

Mo., St. Louis.—Rex Amusement Co. will erect theater, store and office building. (See "Theaters.")

Mo., St. Louis.—Otto Oerter will erect store and dwelling. (See "Dwellings.")

Mo., St. Louis.—W. R. Bright will erect two-story store at 107 N. Eighth St.; cost \$8000.

Mo., St. Louis.—Hanover Realty & Power Co. incorporated with \$150,000 capital stock by Charles W. Wall, treasurer of Meyer Bros. Drug Co.; Henry D. Johnson, R. E. Mathews and others; is holding company for building to be erected at Vandeventer Ave. and Olive St.; six stories; fireproof; high-pressure steam heat; electric light; electric elevator; plans by Milligan & Wray, St. Louis. (This structure recently noted to be erected by C. W. Wall.)

Mo., St. Louis.—F. H. Manger will erect two-story store building at 1319 Washington St.; cost \$13,500.

Okla., Hopeton.—Dr. R. Z. Leney and E. Hall will rebuild store occupied by W. B. Hendrickson; 25x50 feet; gas lighting; cost \$3000; bids opened. (Recently noted burned.)

S. C., Charleston.—James F. Condon & Sons will receive bids through D. C. Barbot, architect, 26 Broad St., Charleston, until April 25 to erect brick building and for other work at 433 King St.; certified check for \$100; plans and specifications at office of architect, or may be had on deposit of \$10.

S. C., Rock Hill.—Mrs. D. Hutchison will expend \$12,000 to \$15,000 to erect office and store building. (See "Bank and Office Buildings.")

Tenn., Gainesboro.—Luke B. Anderson will rebuild drug store recently reported burned; 24x64 feet or 48x64 feet; two stories; fireproof construction; acetylene lighting; metal roof. (See "Machinery Wanted.")

Tenn., Memphis.—W. H. Read will, it is reported, erect commercial building on Monroe Ave., probably 12 stories; site 270x143½ feet; cost \$100,000.

Tex., Bogata.—Marshall & Keys, Blossom, Tex., will expend \$9000 to erect store building; 25x100 feet; two stories; brick and wood; stoves; concrete sidewalks; tin roof; plans and construction by owner. (Recently noted.)

Tex., Cedar Bayou.—T. H. McLean will rebuild store and warehouse recently reported burned. (See "Warehouses.")

Tex., Cuero.—August Biedermann will erect business building; brick; cost \$2500.

Tex., Cuero.—M. Byrne will erect business buildings on Main St.; brick; cost \$4200.

Tex., Dallas.—M. Costello will erect business building; two stories; brick; cost \$7000.

Tex., Dallas.—L. A. Stemmons will erect building at Rosemont and Jefferson Sts.; two stories; frame; cost \$5000.

Tex., Vernon.—J. E. Lutz will erect store and office building; three stories.

Va., Lynchburg.—Mrs. Virginia M. Roberts will erect three brick stores at 5th and Monroe Sts.; cost \$4000.

Va., Richmond.—Edward Whitlock and Byron Bear will erect several stores.

W. Va., Bluefield.—Ancient Free and Accepted Masons are having plans prepared by Miller & Mahood, Roanoke, Va., for store, office and lodge building. (See "Association and Fraternal.")

## THEATERS

Mo., Kansas City.—George Wirthman will erect moving-picture theater at 3440-42 Broadway; brick; cost \$9000.

Mo., St. Louis.—Rex Amusement Co. will erect theater, store and office building at Grand and Lucas Aves.; three stories; fireproof; 106x130 feet; seating capacity of theater 2500; cost \$90,000; plans through architectural competition between Clymer & Drischler and Helfensteller, Hirsch & Watson, all of St. Louis. (Recently noted.)

Okla., Muskogee.—Homestead Amusement Co., Fred E. Turner, president, 11 Arkansas Bldg., is having plans prepared by Cross & Starr, Tulsa, Okla., for theater; 53x130 feet; semi-fireproof construction; steam heat; roof to open for summer; cost \$25,000. (Recently noted.)

## WAREHOUSES

Ala., Birmingham.—Herring-Hall-Marvin Safe Co., main office 400 Broadway, New York, contemplates, it is reported, erecting warehouse.

Ala., Summerdale.—Alabama Sumatra Havana Tobacco Co., Chicago, Ill., is reported as arranging to erect proposed tobacco warehouse; fireproof; cost about \$75,000.

Ga., Valdosta.—Alliance Warehouse Co. will enlarge warehouse to increase capacity about 1000 bales.

Md., Baltimore.—Henry Frank estate is having plans prepared by Frank & Kavanaugh, 328 N. Charles St., Baltimore, to remodel warehouse at 441 N. Gay St.; will rearrange interior, etc.; cost \$5000.

Md., Baltimore.—C. H. Kaufman, 524 W. Lafayette Ave., has plans by George R. Morris, Gunther Bldg., Baltimore, for warehouse at 1404-06 Division St.; brick and concrete; 29x50x28 feet; five stories; freight elevator; steam heat; electric lights; cost \$10,000.

Md., Baltimore.—Baltimore Bargain House, Jacob Epstein, proprietor, Baltimore St. and Park Ave., contemplates erection of warehouse at Scott and Stockholm Sts.; unconfirmed reports state structure will be of reinforced concrete and seven stories high.

## BUILDING CONTRACTS AWARDED

### APARTMENT-HOUSES

D. C., Washington.—S. W. Woodward awarded contract to F. T. Nesbit & Co., Washington, to erect two apartment buildings at Eckington; five stories; 50x83 feet; plans by Milburn, Helster & Co., Union Savings Bank Bldg., Washington.

D. C., Washington.—David McCarragher awarded contract to McCarragher Construction Co., 727 13th St. N. W., Washington, to erect proposed apartment-house; brick; tin roof; steam heat; electric lighting; cost \$12,000; plans by Frank G. Pierson, Washington Loan & Trust Bldg., Washington.

Ky., Paducah.—James Koger awarded contract to William Karnes, Paducah, to erect proposed Colonial Apartment; three stories; red brick; stone trimmings; six six-room apartments; awarded contract for brick work to Mr. Welkel, Paducah.

Md., Baltimore.—Dr. Thomas Ashby awarded contract to Milton C. Davis, 15 E. Fayette St., Baltimore, to erect apartment-house on Dolphin St. between Madison Ave. and Eutaw Pl.; three stories; brick; cost \$15,000; plans by Theodore Wells Pietsch, American Bldg., Baltimore. (Recently noted.)

Mo., Kansas City.—Anna Graham awarded contract to Johnson & De Lano, Kansas City, to erect apartment-house at 908-10 E. 29th St.; three stories; brick; six apartments; cost \$12,000.

Tenn., Knoxville.—A. B. Day will erect apartment-house on Clinch Ave.; 36x65 feet; three stories; ordinary construction; steam heat; electric lighting; gravel roof; cost \$12,000; plans by L. C. Waters, Knoxville; contract awarded to Claiborn & Brooks; material purchased locally.

Tenn., Memphis.—W. F. Bailey awarded contract to Memphis Building Co., Memphis, to erect 28-room apartment-house at Mosby St. and Jackson Ave.; brick; cost \$10,000.

Va., Norfolk.—Mrs. J. N. Williams awarded contract to E. L. Myers of Norfolk to erect apartment-house; four stories; gravel roof; cost \$10,000; heating and plumbing to cost \$2500; plans by Eberhart & Son. (Recently noted.)

### ASSOCIATION AND FRATERNAL

Ky., Louisville.—Young Men's Christian Association awarded contract at \$253,160 to Wells Bros. Company, Inc., Chicago, Ill., to erect building at 3d St. and Broadway; 14x180; fireproof construction; steam heat; electric elevator; composition roofing; plans by Kenneth McDonald and W. J. Dodd, Louisville. (Recently noted.)

La., Napoleonville.—Assumption Council, Knights of Columbus, awarded contract at \$9800 to Corbin Bros., Jeanerette, La., to erect store and club building. (Recently noted.)

N. C., Raleigh.—Young Men's Christian Association, Cary J. Hunter, chairman, awarded contract to King Lumber Co., Charlottesville, Va., at \$52,537 to erect association building; four stories and basement; 70x126 feet; brick; stone trimmings; plans by Shattuck & Hussey and Frank J. Thomson, associate architects, Masonic Temple, Raleigh. (Recently noted.)

### BANK AND OFFICE

Md., Baltimore.—Commonwealth Bank, Howard and Madison Sts., has plans by Baldwin & Pennington, Professional Bldg., Baltimore, for improvements to bank building; will erect addition to conform with present structure; install tile floors, etc.; 22x70 feet; semi-fireproof; hot-water heat; electric lighting; tin roof; cost \$30,000; con-

N. C., Greensboro.—Carolina Warehouse Co., E. C. Faires, secretary, Aberdeen, N. C., invites bids to erect warehouse; cost \$10,000. (See N. C., Raleigh.)

N. C., Raleigh.—Carolina Warehouse Co., E. C. Faires, secretary, Aberdeen, N. C., invites bids to erect warehouses at Greensboro and Raleigh, N. C.; cost \$10,000 each; plans not determined. (Recently noted.)

Tex., Cedar Bayou.—T. H. McLean will rebuild warehouse and store; 30x60 feet and 31x50 feet; cost \$6000; plans by owner; day labor. (Recently reported burned.)

Va., Claremont.—Company organized by H. J. Arrington, W. G. Lovell and others purchased site near Hill Station and will erect warehouse.

Va., Richmond.—Columbia Warehouse Development Corporation incorporated with \$300,000 capital stock; Isalah Fuller, president; E. Latimer Gordon, secretary-treasurer.

tract awarded to John T. Buckley, 916 Bolton St., Baltimore.

Md., Frederick.—Frederick County National Bank has plans by Alfred Cookman Leach, 223 N. Charles St., Baltimore, Md., for bank building at Market and Patrick Sts.; three stories and mezzanine; 36 feet 3 inches by 62 feet; Marvilia marble base 6 feet high; two monolithic marble columns on either side of entrance; superstructure light colored brick; ornamental terra-cotta trimmings; 45 feet high; banking-room to have marble tile and cork tile flooring; reinforced concrete vault with reinforcing of case-hardened steel; circular vault door; fireproof construction; concrete basement; storage and book vaults in basement; awarded contract to John K. McIver, 7 Clay St., Baltimore, Md. (Recently noted.)

S. C., Fort Mill.—Dr. J. B. Mack awarded contract to A. A. Bradford, Fort Mill, to erect store and office building. (See "Stores.")

Tex., Denison.—Denison Bank & Trust Co. awarded contract to W. D. Collins Safe Co., Denison, to remodel Ford building and install marble fixtures.

Tex., Lufkin.—Angelina County National Bank awarded contract to W. D. Collins Safe Co., 511 Main St., Denison, Tex., to remodel bank and install marble fixtures and interior trimmings.

Va., Norfolk.—Virginia Railway & Power Co. awarded contract to erect car barn, shop and office building. (See "Miscellaneous Structures.")

Va., Richmond.—Estate of Joseph Bryan will expend \$25,000 to erect newspaper and office building; 70x80 feet; 10 stories; fireproof construction; steam heat; electric lighting; electric elevator; slag roof; plans by Ferguson, Calrow & Taylor, Norfolk, Va.; contract recently noted awarded to John T. Wilson Company, Richmond.

W. Va., Benwood.—Bank of Benwood awarded contract to McDonald Bros., Wheeling, W. Va., to erect bank building, and to Peter Walsh, Benwood, for plumbing and heating.

### CHURCHES

Mo., St. Louis.—Grace Evangelical Church awarded contract to Erdbruegger & Buemer, St. Louis, to erect edifice; 94x134 feet; ordinary construction; steam heat; electric lighting; slate roof; cost \$100,000; plans by Chas. F. May, St. Louis; Rev. Martin S. Sommer, 3118 St. Louis Ave., pastor. (Previously noted.)

Tex., Houston.—Grace Methodist Church awarded contract to A. C. Pig, Houston, to complete edifice at 13th and Yale Sts.; completion by May 5; nine memorial windows.

Va., Portsmouth.—First Friends Church awarded contract to C. M. Majors, Portsmouth, to erect edifice; frame; cost \$5000. (Recently noted.)

W. Va., Grafton.—St. Paul's Lutheran Church, Rev. A. F. Richardson, pastor, awarded contract to S. A. Shackelford & Son, Grafton, to remodel edifice.

### CITY AND COUNTY

Ala., Andalusia.—Jail.—Covington county is having plans prepared by Fred W. Kausfeld, Montgomery, Ala., for jail; cost \$25,000.

La., Shreveport.—Coliseum.—City awarded contract at \$29,990 to Stewart-McGehee Construction Co. to erect proposed coliseum.

Mo., Kansas City.—Comfort Station.—City awarded contract at \$12,333 to Louis Breitig & Son, Kansas City, to erect comfort station at 9th and Main Sts.; two entrances; white

glazed tile walls; terrazzo floors. (Previously noted.)

Tenn., Nashville.—Police Station.—Board of Public Works awarded contracts as follows to remodel police station: Plumbing, \$861, and steam heating, Kean & Gallagher, \$467.50; stone work, Nashville Cut Stone Co., \$55; roofing and galvanized-iron works, Phillips & Buttorff Manufacturing Co., \$171; concrete work, Clayton Paving Co., \$76.20; painting and glazing, Freeman Decorating Co., \$849; carpenter work, I. N. DeHart & Son, \$2397; steel cast-iron work, Atlas Machine Co., \$288; brick work, Mims-Sneed Co., \$1435; all of Nashville. (Recently noted.)

Tex., Beaumont.—Jail.—Beaumont County Commissioners awarded contract at \$4782.40 to Southern Structural Steel Co., San Antonio, Tex., to remodel jail, including constructing new cells, etc.

Tex., Sherman.—Jail.—Grayson County Commissioners awarded contract for improvements to jail; cost \$8000.

### COURTHOUSES

Ala., Scottsboro.—Jackson County Commissioners awarded contract to Mr. Dobson, Birmingham, Ala., to erect \$25,000 addition to courthouse; plans by R. H. Hunt, Chattanooga, Tenn.

### DWELLINGS

Ala., Montgomery.—William H. Teague will erect residence; two stories; brick veneer; asbestos shingles; cost \$10,000; cost of heating plant, \$400 to \$600; plans by G. Frank Gallher, 326 Bell Bldg., Montgomery; contract awarded to Hugger Bros., Montgomery.

D. C., Washington.—Dr. E. B. Behrend, 1214 K St. N. W., awarded contract to W. E. Mooney, 1425 New York Ave. N. W., Washington, to erect residence at 1354 Biltmore St.; four stories and English basement; Indiana limestone and colonial red brick; 25x75 feet; ordinary construction; cost of heating, \$850; cost of lighting, \$450; slag roof; total cost, \$18,400; also erect garage, 20x21 feet; plans by Gregg & Lisenring, 1320 New York Ave. N. W., Washington.

D. C., Washington.—Edwin A. Martin awarded contract to John H. Nolan, 1413 G St. N. W., Washington, to erect 13 dwellings at 19th and Kenyon Sts. N. W.; three stories; 11 rooms each; plans by John M. Donn, 1737 H St. N. W., Washington.

Fla., Lakeland.—E. P. Mitchener awarded contract to J. B. Streeter, Lakeland, to erect 26x26-foot bungalow recently noted; shingles; plans by C. F. Brush, Lakeland. (See "Machinery Wanted.")

Fla., Pensacola.—Mr. White awarded contract to W. L. Bennette to erect frame residence.

Fla., Pensacola.—Whiting Hyer awarded contract to Charles Miller, Pensacola, to erect dwelling; frame; cost \$5000.

Md., Baltimore.—Andrew G. Cromwell, 1633 W. Fayette St., awarded contract to Provident Realty Corporation, Garrison and Piedmont Aves., Baltimore, to erect cottage at Beulah Villas; two and a half stories; frame.

Md., Baltimore.—F. E. Dreyer of Continental Trust Co., Calvert and Baltimore Sts., awarded contract to S. Luthicrum, Jr., 231 Courtland St., Baltimore, to erect cottage; 28x43 feet; two and a half stories; frame; shingle sides; one porch 43 feet long; cost \$7000; plans by H. G. Crisp, 2709 St. Paul St., Baltimore.

Md., Baltimore.—Charles M. Kolb awarded contract to J. W. Paea, 1617 Fulton Ave., Baltimore, to erect cottage on Bateman Ave.; 26x34 feet; two and a half stories; slate roof; concrete foundation; cost \$4000; plans by John R. Forsythe, 222 N. Charles St., Baltimore.

Md., Govans.—Jacob Parr awarded contract to Henry A. Knott, 1305 Homewood Ave., Baltimore, Md., to erect four dwellings; 32x46 feet; fireproof; steam heat; gas and electric lighting; tin roof; cost \$10,000; plans by Herbert C. Aiken, 223 St. Paul St., Baltimore, Md. (Recently noted.)

Miss., Meridian.—Mrs. E. Cahn awarded contract to C. H. Dabs, Meridian, to erect residence recently noted; 40x70 feet; frame; brick veneer; steam heat; gas and electric lighting; concrete sidewalks; glazed tile roof; cost \$18,000; plans by Burt Stuart, Meridian. (See "Machinery Wanted.")

Mo., St. Louis.—Dover Place Realty & Investment Co., 425 Schirmer St., awarded contract to John V. Kinney, 6800 Minneapolis Ave., St. Louis, to erect dwelling; seven rooms; hot-water heat; gas and electric lighting; composition roof; cost \$3700. (Recently noted.)

N. C., Mat Rock.—Alfred Huger, Charles-



ton, S. C., awarded contract to W. P. Banc to erect residence; 10 rooms; cost several thousand dollars; plans by Ewbank & Ewbank.

Tenn., Memphis.—S. G. Wilson awarded contract to E. Earley, Memphis, to erect residence at 1678 Forrest Ave.; cost \$4980.

Tenn., Memphis.—H. N. Martin awarded contract to J. R. Klyce, Memphis, to erect four residences at 471, 476, 485 and 491 Simpson Ave.; cost \$6590.

Tenn., Memphis.—Miss Belle Boyd awarded contract to J. A. Moore, Memphis, to erect residence at 135 N. Claybrook St.; cost \$3350.

Tenn., Memphis.—E. H. Parr awarded contract to F. E. Meacham, Memphis, to erect residence at 1870 Court Ave.; cost \$3650.

Tenn., Memphis.—Mrs. Mary Cummins awarded contract to R. F. Creston, Memphis, to erect four residences on Alston Ave.; cost \$1800 each.

Tenn., Nashville.—E. Holder awarded contract to erect bungalow on Richland Ave.; shingle; cost \$5000; plans by C. K. Colley, Nashville.

Tenn., Nashville.—W. B. McCabe awarded contract to erect bungalow; stucco; cost \$4500; plans by C. K. Colley, Nashville.

Tex., Dallas.—B. M. Burgher will erect residence at 3331 Cedar Springs; eight rooms; frame; concrete basement; hot-air heat; gas and electric lighting; concrete sidewalks; shingles; cost \$5000; plans by Henry L. Wilson; contract awarded to B. F. Maretooth.

Tex., Houston.—Dr. John H. Foster awarded contract to F. A. Goldapp, 409 Capitol Ave., Houston, to erect residence; 10 rooms; slate roof; cost \$7500; plans by B. P. Briscoe, Commercial Bank Bldg., Houston. (Recently noted.)

Va., Norfolk.—Mrs. E. V. Maynard awarded contract to C. M. Casperson, Norfolk, to erect brick and frame residence; cost \$4000.

Tex., Sherman.—L. P. Taylor awarded contract to J. A. Simmons, Denison, Tex., to erect residence three miles from Sherman; two stories; cost about \$3000; plans by Will L. Gill, Denison, Tex.

Va., Alexandria.—Orlando H. Kirk awarded contract to Charles A. Howard, Alexandria, to erect concrete block residence at North Braddock.

Va., Norfolk.—Parker & Hume awarded contract to L. McCloud, Norfolk, to erect residence on Armistead Rd.; frame; cost \$3500.

Va., Norfolk.—W. M. Reay, 313 29th St., has plans by and awarded contract to Building Construction Co., Norfolk, to erect dwelling; 30x52 feet; cement stucco; hot-water heat; electric lighting; concrete sidewalks; slate roof. (Building Construction Co. recently noted to erect dwelling.)

Va., Norfolk.—B. B. Halstead awarded contract to B. L. Nicholson, Norfolk, to erect frame residence at Colonial and Graydon Aves.; mill construction; hot-water heat; electric lighting; shingle roof; cost \$8990.

Va., Norfolk.—H. E. Dorin awarded contract to Port Norfolk Supply Co., Port Norfolk, P. O. at Portsmouth, to erect five double houses and one single house on Carolina St.

Va., Warm Springs.—Mary Johnston awarded contract to S. E. Pace, Warm Springs, through architects, Carneal & Johnston, Richmond, Va., to erect dwelling near Warm Springs; private electric lighting, water-works, etc.; vapor heat; red slate roof. (See "Machinery Wanted.")

## GOVERNMENT AND STATE

Ala., Talladega—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., awarded contract at \$60,831 to R. P. Farnsworth, Owensboro, Ky., to erect postoffice. (Recently noted.)

S. C., Darlington—Postoffice.—Treasury Department, James Knox Taylor, Supervising Architect, Washington, D. C., awarded contract at \$43,362 to W. J. Brent, Norfolk, to erect postoffice building. (Recently noted as lowest bidder.)

Tex., Mercedes—Postoffice.—Hidalgo County Bank awarded contract to erect four brick buildings; one for postoffice.

## HOTELS

Ala., Atmore.—W. J. Grubbs awarded contract to erect hotel on S. Main St.; 16 rooms.

Ala., Montgomery.—Windsor Hotel awarded contract to James Hodgson, Montgomery, to remodel and improve hotel; repainting, plaster, install elevators, etc.; cost \$20,000.

Mo., Cape Girardeau.—George McBride awarded contract to Vogelsang Bros., Cape Girardeau, to erect Hotel McBride; brick walls; terra-cotta trimmings; cost \$38,263; plans by Walter S. Slifer, Cape Girardeau. (Recently noted.)

## MISCELLANEOUS

Ala., Anniston—Veterinary Hospital.—W. D. Staples awarded contract to McClurkin & Humphries, Anniston, to erect veterinary hospital; 50x70 feet; 14-foot ceiling; ordinary construction; instantaneous water heater; electric lighting; electric elevator; 5-ply tar and gravel roof; cost \$2500 to \$3000; plans by Carlton & Co., Anniston. (Recently noted.)

Va., Norfolk—Car Barns, Shops, etc.—Virginia Railway & Power Co. awarded contract to J. H. Pierce, Norfolk, to erect combined car barn, shops and office building on 18th St. according to plans by Neff & Thompson, Norfolk; fireproof; brick and reinforced concrete; sash and skylight of steel and glazed with wire glass; car barns will consist of two fireproof sheds each 400x115 feet, divided into three compartments, each to contain three tracks and separated from remainder of building by solid firewalls; underwriter's standard system of fire protection; shops will consist of machine, armature repair, blacksmith, carpenter and paint shops; storeroom between shop and office building; lighted by means of steel sash in side walls and sawtooth sash in specially constructed roof; office building equipped with rest and assembly rooms for motormen and conductors; vacuum cleaning system; shower baths; tungsten lamps, etc. (Contract recently noted awarded to Mr. Pierce at \$43,114.)

## SCHOOLS

Fla., Tallahassee.—State Board of Control awarded contract at \$5680 to J. A. Apperson, Atlanta, Ga., to erect additional dormitory to Florida State College for Women; at \$3397 to Atlanta Steam Heating Co., Atlanta, for heating.

Mo., Canton.—Christian University awarded contract to W. R. Odor, Fulton, Mo., to erect dormitory; cost \$50,000.

Tex., Milford.—Texas Presbyterian College awarded contract to Furry & Hughes to erect dormitory; three stories and basement; brick; heating and lighting contracts not let; cost \$30,000; plans by J. O. Galbraith, Hillsboro, Tex.

Tex., Sherman.—School Board awarded contract at \$30,000 to John Allman, Sherman, to erect school for South Ward; brick; completion by August 15.

W. Va., Franklin.—Board of Education awarded contract to Keiser & Lee, Franklin, to erect proposed school building; 50x60 feet; ordinary construction; cost \$3600; plans by Bernard Marshall.

## STORES

Ala., Birmingham.—Caldwell Real Estate & Investment Co. awarded contract to Standard Contracting Co., Birmingham, to erect three-story store and office building; ordinary construction; composition roof; plans by Miller & Martin, Birmingham. (Contract recently noted awarded to Allen J. Krebs & Co., Birmingham, to erect store to be occupied by Yielding Bros.)

Fla., Pensacola.—A. Bronum awarded contract to Mr. Burrows to erect store; 50x80 feet; brick; pressed-brick front; gas and electric lighting; cost \$3500.

Ga., Atlanta.—Carroll Payne awarded contract to Fitzhugh Knox, Atlanta, to erect five stores; entire frontage 100 feet, with equal depth; two stories; also erect one-story garage in rear 50x100 feet.

Ga., Macon.—Dennenberg Company will expend \$25,000 to erect store building; 124x51 feet; semi-fireproof construction; plans by W. L. Stoddard, 30 W. 30th St., New York; contract awarded to J. F. Griffin Sons, Box 564, Macon; heating, wiring, plumbing and sprinkler system not in contract. (Recently noted.)

La., Napoleonville.—Assumption Council, Knights of Columbus, awarded contract to erect store and club building. (See "Association and Fraternal.")

Md., Baltimore.—Irvin Confectionery Co., 947 Linden Ave., awarded contract to Edward Watters & Co., 532 St. Paul St., Baltimore, to alter building at 1120 N. Charles St.; cost \$6800.

Md., Baltimore.—Stewart & Co., Howard and Lexington Sts., will erect three additional stories to store building; is reported to have had plans prepared and to have awarded contract for this improvement;

light brick; electric lights; will extend elevators to new stories.

S. C., Fort Mill.—Dr. J. B. Mack awarded contract to A. A. Bradford, Fort Mill, to erect store and office building on Main St.; two stories; brick; 35x60 feet.

S. C., Rock Hill.—Ratteree Bros. awarded contract to Moses & Bumgarner, Hickory, N. C., to erect addition to Ratteree Bldg.; 75x25 feet; triangular shape; two stories; press brick; stone trimmings; second story to be used for Commercial Club. (Recently noted.)

Tex., Big Wells.—H. W. Carnahan awarded contract to erect store building; brick; 25x100 feet; plate glass front.

Tex., Bryan.—Dr. J. W. Howell has plans by and awarded contract to Lewis & Myerlamb, Bryan, to erect store and garage. (See "Motors and Garages.")

Tex., Elgin.—Max Hirsch awarded contract to R. Roemer, Elgin, to erect business building; brick.

Tex., Jefferson.—T. D. Howell awarded contract to G. T. Wilson, Sulphur Springs, Tex., to erect store building; two stories; brick; frontage 50 feet.

Tex., Jefferson.—W. P. Schlutter awarded contract to G. H. Wilson, Sulphur Springs, Tex., to erect mercantile building; cost \$10,000; plans by George Lindsey, Greenville, Tex. (Recently noted.)

Tex., Mercedes.—Hidalgo County Bank awarded contract to erect four buildings in rear of bank; one to be occupied as post-office; brick.

Tex., Palestine.—William Broyles has plans by and awarded contract to John Gaught to erect business building; 25x100 feet; brick; electric hand-power elevator; cost \$4000. (Recently noted.)

Tex., Waco.—Goldstein-Migel Company awarded contract to Gross Construction Co., Oklahoma City, Okla., to erect store building; four stories and basement; steam heat; electric lights; 200 feet plate-glass windows; cost about \$100,000; plans by Scott & Pearson, Waco. (Previously noted.)

Va., Norfolk.—B. H. Zacks awarded contract to F. N. Heley, Norfolk, to erect brick stores at Liberty and Appomattox Sts.; cost \$4200.

Va., Norfolk.—George P. Bancholis awarded contract to Baker & Brinkley, Norfolk, to erect brick store at 19 Market Pl.; cost \$10,000.

## RAILROAD CONSTRUCTION

### RAILWAYS

Ala., Union Springs.—W. M. Blount of Union Springs, president of the Birmingham & Southeastern Railway, is reported receiving bids for construction of 20 miles of line between Tallahassee and Electric, Ala.

D. C., Washington.—A report from Dover says that F. J. Lisman & Co., bankers, New York, have bought from the Moffatt estate control of the Chesapeake Beach Railway, 32 miles long from Washington, D. C., to Chesapeake Beach, Md. Improvements may be made. Paul X. Waters, Washington, D. C., is secretary-treasurer; W. F. Jones is president.

Fla., Dunnellon.—The Atlantic Coast Line is reported grading on its new west coast short line between Dunnellon and Wilcox. It is further stated that the company will build a line to Cedar Keys. E. P. Pleasants, Wilmington, N. C., is chief engineer.

Fla., Lakeland.—A letter says that the Atlantic Coast Line will spend \$50,000 immediately for terminal and freight buildings at Lakeland. E. B. Pleasants, Wilmington, N. C., is chief engineer.

Fla., Tampa.—It appears that Lee Dekle of Tampa and others are interested in the plan to build an electric railway to connect Tampa, Clearwater and St. Petersburg.

Ga., Alapaha.—The Ocala Southern Railroad Co. announces the completion and opening of its extension from Alapaha to Nashville, Ga., 13 miles. J. A. J. Henderson of Ocala, Ga., is president.

Ga., Augusta.—J. M. White, general superintendent of the Augusta Southern Railroad, is reported saying that plans for improving the line between Keysville and Augusta are under consideration.

Ga., Arcola.—W. C. Zickgraf, president and manager of the Zickgraf Lumber Co. at Arcola, is quoted saying that it expects to build four miles of logging railroad.

Ga., Atlanta.—Application is made to charter the Atlantic & Macon Railway Co. to

## WAREHOUSES

Fla., Pensacola.—W. F. Bingham awarded contract to erect warehouse; 30x110 feet; brick; mill construction; electric lighting; cost \$3500.

Md., Baltimore.—Terminal Warehouse Co., North and Pleasant Sts., awarded contract to Noel Construction Co., German and Calvert Sts., Baltimore, to erect flour-house extension; six stories; brick and concrete; reinforced concrete floors; cost at least \$100,000; plans by Owens & Sisco, 1005 Continental Bldg., Baltimore. (Recently noted.)

Md., Baltimore.—George Spindler will probably let contract to Fred C. Carstens, 608 W. Pratt St., Baltimore, to erect warehouse at 608 W. Pratt St.; four stories; brick; stone trimmings; concrete foundation; electric lights; steam heat; plans by Henry Feldhaus, 2627 St. Paul St., Baltimore. (Recently noted.)

Md., Baltimore.—Atlantic Real Estate Co., Jacob Goldstein, president, 344 Equitable Bldg., awarded contract to Cooper-Kubits Company, Baltimore, to erect warehouse on Gay St. near Water St.; four stories; brick and concrete; 73x34 feet; steam heat; electric elevator; slag roof; cost \$10,000. (Previously noted.)

Tex., Houston.—B. A. Riesner awarded contract to C. C. Wenzel to erect warehouse to be occupied by Desel-Boettcher Company.

Tex., Houston.—C. C. Wenzel, Houston, has contract to erect warehouse at Commerce Ave. and Travis St.

Tex., Texas City.—R. M. Orth, care of Texas City Company, wires Manufacturers Record: "Texas City Transportation Co. awarded contract to James Stewart & Co., Fisher Bldg., Chicago, Ill., to erect steel and concrete pier and double-decked warehouse on old Inman dock; 300 feet long, 300 feet wide, affording berthing room for five steamers with capacity of 40,000 bales cotton at shipside; also let contract for five cotton concentrating warehouses on unit plan, but connecting with each other and with shipside by conveyors; completed by September; cotton exporters formed association now contracting for large high density cotton compress near shipside available for next cotton season." (Previously noted.)

Va., Richmond.—P. G. Kelly Company awarded contract to Fulton Brick Co., Richmond, to erect warehouse; 85x120 feet; five stories; mill construction; electric elevator; slag roof; cost \$50,000; plans by Carneal & Johnson, Richmond. (Recently noted.)

build the long-proposed electric interurban railway from Atlanta to Macon, Ga., 95 miles, via Forest, Jonesboro, Lovejoy, Hampton, Sunnyside, Griffin and Forsyth. Capital stock \$100,000, with privilege of increase. Preferred stock may be issued to the amount of 50 per cent. of the common. Offices at Atlanta. Incorporators: Kennett Cowan, W. J. Sheahan and Sellar Bullard of Chicago; C. G. Young and Howard R. Stewart of New York; Hollins M. Randolph, Hugh M. Scott and Robert S. Parker of Atlanta; W. J. Massee of Macon and Seaton Grantland and W. J. Kinkaid of Griffin, Ga. Mr. Randolph, attorney for the road, said that matured plans for the construction are being considered, but he had no further announcement to make at present.

Ga., Darien.—Reported that the Georgia Coast & Piedmont Railroad Co. has decided to build the contemplated extension from Darien to Brunswick, Ga., about 18 miles. Some concessions are asked from the city of Brunswick. A. de Sola Mendes is vice-president and general manager at Darien, Ga.

Ga., Macon.—The Georgia Southern & Florida Railway is reported buying property in Macon to increase its yard facilities. W. C. Shaw, Jr., is chief engineer at Macon.

Ky., Frankfort.—The Louisville & Interurban Railroad Co., says a report, contemplates building an extension from Shelbyville to Frankfort, about 20 miles. T. J. Minary, Louisville, Ky., is president.

Ky., Frankfort.—Charles E. Hoge of Frankfort says that he has purchased the Frankfort & Cincinnati Railway, 41 miles long from Frankfort to Paris, Ky., but that he does not obtain possession until July 1. It is intended by those who are interested to extend the line, if possible, to the mountains of Kentucky as originally planned.

Ky., Glasgow.—E. F. Whenton, general manager of the Indianapolis Construction Co., 421 Hume-Maner Bldg., Indianapolis, Ind., says it has organized and is preparing to construct 47 miles of standard gauge



freight and passenger electric railway connecting Glasgow and Hodgenville, Ky.

Ky., Harlan.—The White Oak Stave Co., says a report, has purchased from the Kentucky Stave & Tie Co. its incline railway crossing the Pine Mountains and will make it a common carrier. Improvements may be made.

La., Abbeville.—The Erath Sugar Co. is reported to have purchased right of way and will immediately build a six-mile standard-gauge railroad north from Erath.

La., Houma.—Engineers are reported surveying for an electric railway from Montegut to Thibodaux, about 35 miles, in which L. Block of New Orleans and others are interested.

La., New Iberia.—H. A. Genung, president of the New Iberia, Lafayette & Northwestern Railroad Co., succeeding the late F. M. Welch, says that it is an independent plan and is not connected with the Frisco. It will build from Eunice to New Iberia, 54 miles.

Md., Baltimore.—The Western Maryland Railroad is reported contemplating an expenditure of about \$400,000 on bridges. H. R. Pratt, Baltimore, is chief engineer.

Md., Hagerstown.—The Hagerstown & Clearspring Electric Railway Co., which has built six miles of grade, will, it is announced, resume construction. Line will be 12 miles long.

Miss., Greenwood.—Local capitalists and promoters are reported planning the construction of an interurban railway from Greenwood to Itta Bena, Miss., about 12 miles. The Board of Trade at Greenwood may be able to give information.

Mo., Kansas City.—W. B. Strang, president of the Missouri & Kansas Interurban Railway Co., is reported negotiating with W. B. McKinley of Champaign, Ill., and others interested in the Illinois Traction Co., who contemplate an extension from St. Louis to Kansas City, which would, it is expected, result in electric line extensions in Kansas and Oklahoma.

Mo., Kansas City.—The Kansas City Southern Railroad, says a local report, will begin construction of a switching system on the North Side. C. E. Johnston is chief engineer at Kansas City.

Mo., Macon.—The Hannibal & Northern Missouri Interurban Railroad Co., which proposes to build an electric railway from Hannibal to Kirksville, Mo., about 100 miles, is reported purchased by Henry Funk and associates, who are quoted saying that they will reorganize the company and continue construction.

Mo., Monett.—The St. Louis & San Francisco Railroad, it is reported, contemplates double-tracking its line between Monett, Mo., and Sapulpa, Okla., 156 miles. F. G. Jonah, St. Louis, is chief engineer of construction.

Mo., St. Louis.—A report from New York says that the Frisco has sold \$12,300,000 of bonds of its New Orleans, Texas & Mexican division, and the proceeds will be used in part for paying off \$8,000,000 of 3-year 5 per cent. notes and the remainder will be reserved for improvements. F. G. Jonah, St. Louis, is chief engineer of construction.

N. C., Bonaal.—An official of the Durham & South Carolina Railroad is quoted saying that it is expected to begin tracklaying on the extension from Bonaal to Rawls, 13 miles, next month and to complete it this summer. R. A. Honeycutt, Durham, N. C., is chief engineer.

N. C., Greensboro.—Asheboro, Randleman and Brewer townships are reported to have voted \$80,000 of bonds for the Randolph & Cumberland Railroad extension, making a total of \$310,000 already voted. E. W. Shedd, Carthage, N. C., is chief engineer.

N. C., Shiloh.—The Shiloh Tramroad Co., with authorized capital of \$25,000, is chartered to build lines for passenger and freight traffic. Incorporators, W. J. Cowell, W. S. Godfrey, J. M. Rutledge, W. W. Sawyer and L. L. Winder.

N. C., Waynesville.—W. S. Whiting, president of the Dover Lumber Co., says that the W. & W. Railroad (presumably Waynesville & Western) is narrow gauge and is owned by the lumber Co. It will be 13 miles long from Waynesville to Maggie, N. C., and two miles beyond via Delwood and Jonathan Creek. Construction is being done by the company. Line will not be incorporated.

Okla., McAlester.—A committee has been appointed to secure subscriptions for the proposed McAlester Railroad Co. to build a line from McAlester southwest. J. H. Gordon, Frank Craig, Melven Cornish and others are interested.

Okla., Miami.—Daniel Morris of Oklahoma

City is reported to have a grading contract on the Missouri, Oklahoma & Gulf Railroad's extension one mile south of Miami. McMahon & Hancock are contractors for the bridge over the Neosho River at Miami.

Okla., Muskogee.—Bridge contracts are reported let by the Missouri, Oklahoma & Gulf Railroad thus: Hancock & McMahon, for piers at Grand River, Spring, Saline and Spavinaw Creeks and Neosho River; to the Missouri Valley Bridge Co., for piers and steel work at Canadian River, steel work at Grand River; to the Fort Pitt Bridge Co., for truss spans at Canadian and Neosho Rivers, Spavinaw and Spring Creeks; to Wisconsin Bridge Co., for girders at Grand River and smaller crossings.

Okla., Oklahoma City.—Concerning report that his company had incorporated in Oklahoma to build part of its line in that State, H. Leone Miller, president of the Winnipeg, Salina & Gulf Railway, Salina, Kans., says it is to build from Omaha, Neb., to Oklahoma City; from Kansas City to Salina, and from Kiowa, Kans., via Guymon, Okla., to Des Moines, N. M., altogether about 1080 miles of line, including five steel bridges averaging 300 feet long. Contract is let to the Winnipeg, Salina & Gulf Construction Co., of which he is also president. Other officers of the railway are O. T. Johnson, vice-president; E. G. Eberhardt, treasurer; C. C. Whitehead, secretary; W. Coughlin, general manager, and Warren Nickerson, chief engineer.

Okla., Wagoner.—An officer of the Missouri, Oklahoma & Gulf Railway is quoted saying that grading is being pushed on the extension from Wagoner to Miami, Okla., 85 miles, and the line is expected to be ready for track by June 1.

Tenn., Gallatin.—C. H. Fidler is reported to have secured \$45,750 in subscriptions for his proposed electric interurban railway from Gallatin to Hartsville, Tenn.

Tenn., Knoxville.—J. C. Thomas, engineer, 706 Bank & Trust Bldg., Knoxville, is inviting bids for construction of two and one-quarter miles of railroad near Knoxville.

Tex., Brownwood.—The Brownwood North & South Railroad Co., now operating 17 miles from Brownwood to May, Tex., has amended charter to increase capital from \$30,000 to \$225,000, and will, it is reported, build an extension from May to Vernon, Tex., about 150 miles. F. G. Jonah, engineer of construction Frisco System, St. Louis, may be able to give information.

Tex., Dallas.—Karnar Bros. & Co., 602 Wilson Bldg., Dallas, have begun construction on the Southern Traction Co.'s line seven miles south of Dallas. The contractor is reported saying that grading forces will be rapidly increased on both the line to Waco and that to Corsicana. J. F. Strickland of Dallas is president of the railroad.

Tex., Dallas.—E. P. Turner and associates have applied for a franchise to build an interurban railway eastward through Rockwall county via the Buckner Orphans' Home and New Hope toward Heath. Construction must begin within a year.

Tex., Dallas.—A. E. Strotton and C. Jessup, representing the Mansfield Engineering & Construction Co. of Indianapolis, are reported to have begun location survey for the Eastern Texas Traction Co. between Dallas and Greenville. J. W. Crotty of Dallas, Tex., is vice-president and general manager.

Tex., San Angelo.—The Gulf, Colorado & Santa Fe Railway is reported planning the construction of new yards at San Angelo. F. G. Pettibone is vice-president and general manager, and F. Merritt chief engineer, both at Galveston, Tex.

Tex., Velasco.—The Houston & Brazos Valley Railroad, says a report, has registered \$220,000 of bonds on 24 miles of its line from Velasco to Anchor, Tex. Some construction may be undertaken. Felix Jackson is president and general manager.

Tex., Waskom.—The Missouri, Kansas & Texas Railway, according to a report quoting an officer, is contemplating construction of a line from Waskom to Lockhart, about 300 miles. A. M. Acheson is chief engineer at Dallas, Tex.

Va., Clifton Forge.—W. W. Boxley & Co. of Clifton Forge are reported given a contract by the Norfolk & Western Railway for grading on the Tug Fork Branch.

Va., Dante.—President Mark W. Potter of the Carolina, Clinchfield & Ohio Railway, 24 Broad St., New York, says that the report published there that the Clinchfield would build its contemplated extension from Dante to Elkhorn City "is premature."

Va., Richmond.—Survey has begun for the Richmond & Rappahannock River Railway from Fair Oaks to Urbana, about 50 miles,

under the direction of Charles L. Rudin of Burnsville, N. C., who has been elected vice-president of the railway company, Joseph E. Willard being president. Headquarters at Richmond.

Va., Richmond.—The Atlantic Coast Line is reported to have given contract to the Rinehart & Dennis Co., Jefferson National Bank Bldg., Charlottesville, Va., for seven miles of double-tracking on its Richmond belt line. There will be about 350,000 yards to be handled and about 6000 yards of concrete. E. B. Pleasants, Wilmington, N. C., is chief engineer for the railroad.

W. Va., Bluefield.—George L. Carter of Bristol, Tenn., formerly president of the Clinchfield Railway, is reported interested in a plan to build an electric railway connecting with Caretta and Coalfield.

W. Va., Charleston.—Frank Trumbull, chairman of the board, Chesapeake & Ohio Railway, is quoted saying that it will build some small branch lines into the coal fields of West Virginia this year. F. I. Cabell, Richmond, Va., is chief engineer.

W. Va., Kenova.—The Norfolk & Western Railway publishes notice that it will begin reconstruction immediately of its bridge over the Ohio River at Kenova. C. S. Churchill, Roanoke, Va., is chief engineer.

W. Va., St. Albans.—The Charleston Traction Co. is chartered to build a line from St. Albans, in Kanawha county, to Mount Carbon, in Fayette county, about 40 miles, connecting also Charleston, Montgomery and other towns between; capital \$250,000;

incorporators W. G. MacCorkle, S. B. Chilton, W. T. Moore, George E. Sutherland and S. Hess, all of Charleston, W. Va.

### STREET RAILWAYS

Ga., Rome.—A movement is under way to secure an extension of the railway of the Rome Railway & Light Co. for one mile into the northern part of the city. H. J. Arnold is general superintendent.

La., Shreveport.—The Shreveport Traction Co. has been voted a franchise by the citizens to build an electric railway to the Cedar Grove factory addition three miles south. W. A. Sullivan is general manager.

S. C., Columbia.—The Columbia Railway, Gas & Electric Co. will apply to the City Council April 23 for franchise to build an extension on Blanding and Gregg Sts. Wm. Elliott is vice-president and general manager.

S. C., Greenville.—The Greenville Traction Co. is acquiring right of way for a belt line to the Dunbar Mills, Virginia-Carolina Chemical Co.'s plant, Westervelt Mills, Brandon Mills and the old belt line near Branwood.

Tex., Fort Worth.—Franchise is granted to L. R. Scarborough, J. K. Winston and H. C. McCart for a street railway from the Hemphill car line to the Southwestern Baptist Seminary. Contract is let to C. T. Hodge and line will be completed by June 15. It will be 1 1/2 miles long.

Va., Winchester.—The City Council is reported to have granted a street-railway franchise to Clarence E. Martin of Martinsburg, W. Va.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

**Air Compressor.**—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa., wants air compressor; 5000 to 6000 cubic feet; 100 pounds pressure.

**Blackboard.**—Blythe & Isenhour, Charlotte, N. C., want prices on composition blackboard for school.

**Boiler.**—See "Cannery Equipment."

**Bottles.**—G. M. Budd, Homestead, Fla., wants addresses of manufacturers of patent medicine bottles.

**Boilers.**—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa., wants four 200-horse-power B. & W. boilers.

**Brick Machinery, etc.**—A. L. Sutton, Paint Rock, Ala., wants prices on machinery for brick and tile plant.

**Bridge Construction.**—Town of North Wilkesboro, N. C., will probably want bids on 125-foot single-track steel bridge supported on steel columns; W. A. Bullis, Town Clerk.

**Bridge Construction.**—J. P. Goodwin, county supervisor, Greenville, S. C., will award contract at 11 A. M. April 29 to construct three steel bridges; also let contract at 11 A. M. April 25 to build wooden bridge near Spartanburg county line; plans and specifications on file with supervisor; certified check \$250.

**Broom Machinery.**—Southern Broom Co., Fort Smith, Ark., wants prices on broom machinery and supplies; operation by electric power.

**Building Materials.**—C. H. Babbs, Meridian, Miss., wants prices on floor tile, art glass, press brick, mill work, etc.

**Building Materials.**—Lewis & Myerlamb, Bryan, Tex., want prices on composition roofing, wire glass, metal skylights, steel ceilings, plate and prism glass.

**Building Materials.**—S. E. Pace, Warm Springs, Va., wants prices on building materials for dwelling.

**Building Plans.**—Odell Hardware Co., Greensboro, N. C., wants addresses of architects who make a specialty of designing apartment-houses, especially small houses.

**Boiler.**—Davidson Lumber Co., Camden, S. C., wants prices on 66-inch by 18-foot return tubular high-pressure boiler, with half front.

**Brick.**—Snell & Hamlett, St. Petersburg, Fla., want paving brick.

**Bridge Construction.**—See "Road Construction."

**Bridge Construction.**—Kaufman County Commissioners, Kaufman, Tex., invite bids

to construct reinforced concrete bridges; plans and specifications on file with T. S. Bond, County Judge; certified check \$200.

**Canal Construction.**—Directors Beaver Bayou Drainage District, Board of Trade Rooms, Solomon Bldg., Helena, Ark., receive bids until April 25 to construct drainage canals; Johnson Bayou ditch, 307,000 cubic yards; Lick Creek ditch, 539,000 cubic yards; Beaver Bayou ditch, 675,000 cubic yards; Hillside ditch, 55,000 cubic yards; total, 1,606,000 cubic yards; bids invited on separate ditches and for construction of whole; map, profile, specifications and bidding blanks sent bidders by C. B. Bailey, consulting engineer, Wynne, Ark., on receipt of \$1; J. A. Guis-singer, resident engineer, Helena, Ark., will go over work with contractors by appointment; New York exchange for 5 per cent. of bid to accompany each proposal.

**Canning Machinery.**—Imperial Canning Co., James S. McCluer, president, Parkersburg, W. Va., wants prices on canning machinery for daily capacity of 25,000 cans tomatoes.

**Cannery Equipment.**—Bourdon-Castanera Packing Co., Biloxi, Miss., wants prices on capping machine, process kettle, gas generators for capping, steam box and 70-horse-power boiler of locomotive type.

**Cars.**—See "Contractors' Equipment."

**Cars.**—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa., wants 15 to 20 standard-gauge steel dump ore cars; dumping device on sides; 40 to 50 tons capacity.

**Car.**—C. F. Brush, Lakeland, Fla., wants prices on new or second-hand street-car trailer.

**Clayworking Machinery.**—See "Brick Machinery, etc."

**Celluloid, Mica, etc.**—Henderson Bros., Blair, S. C. (not N. C., as lately printed), want strong, pilant, non-transparent material in sheets of varying dimensions, such as celluloid, mica, etc.

**Concrete Construction.**—Luke B. Anderson, Gainesboro, Tenn., wants information and prices on concrete structures.

**Contractors' Equipment.**—E. M. C., Room 1953, 50 Church St., New York, wants No. 6 McCully gyratory crusher; four guy derricks, 60 to 65-foot masts, 14-inch castings; six or eight standard-gauge flat cars of 56,000 or 60,000 pounds capacity; six Lidgerwood 7x10 or 8 1/2x10 double-cylinder skeleton hoisting engines with No. 4 swingers; 20 2 to 2 1/2-yard bottom-dump concrete buckets; pile-driving hammer; delivery Towson, Md. Give full particulars.



**Cotton Gin.**—Chester A. Knott, Heskell, Tenn., wants bids on cotton gin.

**Cotton Compresses.**—E. F. Ballard, Tupelo, Miss., wants second-hand compress.

**Cottonseed Oil, etc.**—Jean K. Artemides, Rue Franque Passage Spouti, Smyrna, Asiatic Turkey, wants to correspond with manufacturers of or dealers in cottonseed oil, margarine, leather, box calf, hides, skins, boots and shoes, cloths, etc., with view to representation.

**Crusher.**—See "Road Machinery."

**Crusher.**—See "Contractors' Equipment."

**Distilling Equipment.**—J. A. MacKethan, MacKethan Bldg., Fayetteville, N. C., wants data and prices on rotary digesters, hogs, shredders, etc., for distilling turpentine, rosin, etc.

**Dredging.**—U. S. Engineer Office, Room 309 Custom-house, Baltimore, Md. Proposals for dredging in Wicomico River, Maryland, received until 1 P. M. May 15. Information on application. W. C. Langfitt, Lieutenant-Colonel, Engineers.

**Dredging.**—Snell & Hamlett, St. Petersburg, Fla., want bids on 100,000 to 150,000 yards dredging.

**Dredging Machinery.**—Walter Castaneda, 1163 Hennen Bldg., New Orleans, La., wants information and prices on ditch cutting and dredging machinery.

**Electric-light Plant.**—Bids received by Mayor and City Council, Manchester, Ga., until 12 M. May 1 for construction of lighting plant complete; 125-horse-power boiler; 100-kilowatt engine generator and switchboard; about five miles pole lines; brick power-house and installing and erecting machinery; preferred to let contract as whole, each bidder to bid on all items; plans and specifications on file with Jas. S. Peters, City Clerk, and with J. B. McCrary Company, engineer, Atlanta, Ga.; rights reserved; certified check for 10 per cent. amount of bid.

**Electric-light Plant.**—City of Biloxi, Miss., wants information on electric-light plant; extent of city,  $5\frac{1}{2} \times 1\frac{1}{2}$  miles; population, 25,000; slabs at \$1.40 per cord and coal at \$3 per ton can be supplied; state size of plant required, number of arc and incandescent lights, cost of operation, etc. Address I. Heidenheim, alderman.

**Electric-light Plant.**—See "Water-works and Electric-light Plant."

**Elevator.**—Treasury Department, office of supervising architect, James Knox Taylor, Washington, D. C. Proposals received at this office until 3 P. M. on May 28, and then opened, for electric passenger elevator in United States postoffice and courthouse, Shreveport, La., in accordance with drawing and specification; copies obtainable at this office at discretion of architect.

**Engine.**—Dover Lumber Co., W. S. Whitling, president, Waynesville, N. C., wants second-hand 250-horse-power Corliss engine; good condition; guaranteed for sawmill operation.

**Engine.**—Thos. W. Jones, Columbus, Ga., wants prices on rebuilt or second-hand 8 or 10-horse-power engine; plain slide valve or automatic.

**Engines.**—Oklahoma Power & Electric Co., Croslen & Chappelle, engineers in charge, 804 Colcord Bldg., Oklahoma City, Okla., will use steam turbines of 800 to 12,000 horse-power units, and has not determined make.

**Engines.**—James Reynolds, Mosheim, Tenn., wants prices on steam and gasoline automobile engines. Give description.

**Fertilizer Machinery, etc.**—Washington, Alexander & Cooke Company (John A. Washington and others), Charles Town, W. Va., wants prices on equipment and materials for fertilizer plant, including rendering plant.

**Fertilizer Machinery.**—Washington, Alexander & Cooke, Charles Town, W. Va., want information and prices on complete equipment for installation of plant to render dead live-stock and slaughter-house products into fertilizer materials.

**Filter.**—See "Laundry Machinery."

**Flour Machinery, etc.**—Troy Milling Co., J. W. Lemonds, manager, Troy, N. C., is receiving proposals on flour and feed machinery.

**Gasoline Engines.**—See "Machine-shop Equipment."

**Heating and Ventilating.**—Bonfoey & Elliott, Tampa, Fla., want bids on heating and ventilating two schools 76x96 feet.

**Hoisting Machinery.**—See "Contractors' Equipment."

**Ice Machines.**—Geo. Pritchett, Leslie, Ark., wants to correspond with builders of 6 to 10-ton ice machines.

**Ice Machinery.**—Port Lavaca Manufacturing Co., J. H. Shell, manager, Port La-

vaca, Tex., wants information and prices on ice machinery.

**Ice Machinery, etc.**—W. E. Shell & Co., Port Lavaca, Tex., want information and prices on ice and cold-storage machinery.

**Ice Plant.**—D. W. Cole, Hartsville, S. C., wants information and prices on erection and complete equipment of ice plant; about 15 tons capacity.

**Ice and Cold-storage Machinery.**—Tullahoma Tobacco & Manufacturing Co., Tullahoma, Tenn., wants bids on complete equipment for 15 to 20-ton ice and cold-storage plant.

**Ice and Cold-storage Machinery.**—A. B. Williford, Arcadia, Fla., wants prices on 10 or 15-ton ice machine and cold-storage; also data on cost per ton of ice manufacturing.

**Ironworking Machinery.**—Barbour Buggy Co., South Boston, Va., wants 24 or 26-inch ironworking planer, with six-foot table, and ironworking lathe, 16 to 20-inch swing, table eight inches between centers.

**Lathe.**—Office Commissioners District of Columbia, Washington, D. C. Proposals received until 2 P. M. April 25 for furnishing lathe, complete, for use in repair department, District of Columbia; specifications and form of proposal obtainable from purchasing officer, District of Columbia.

**Laundry Machinery.**—Thos. W. Jones, Columbus, Ga., wants prices on following for laundry at Milledgeville, Ga.; steam-heated mangle, 100 inches; rebuilt or second-hand engine, about 8 or 10 horse-power, plain slide valve or automatic; supplies; laundry wagon, etc.; also water filter.

**Leather.**—See "Cottonseed Oil, etc."

**Locomotive.**—The Males Company, 82 Perlin Bldg., Cincinnati, O., wants geared-type standard-gauge 40-ton locomotive; good order; Tennessee delivery. Give full particulars and lowest dealers' price first letter.

**Machine-shop Equipment.**—Sterling Automobile Co., W. C. Bull, manager, Mercedes, Tex., opens bids April 20 to install five-horse-power gasoline engines, eight-foot lathe, milling machine, drill press, emery wheel, power hack-saw, pulleys, shafting and belting.

**Machine-shop Equipment, etc.**—Live Oak Locomotive and Machine Works, T. P. Alston, president, Live Oak, Fla., wants additional machinery and supplies for general machine shop, building, repairing and foundry plant.

**Machine Tools.**—Wrinkle & Miller Foundry & Machine Co., Dalton, Ga., wants prices on second-hand machine lathes, planer and shaper.

**Margarine.**—See "Cottonseed Oil, etc."

**Metal Pipe, etc.**—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. April 29, then opened in public, for furnishing car couplers, wrought-iron and steel pipe, cast-iron pipe and fittings, lead gaskets, gate valves, fire hydrants, asbestos gaskets, rubber gaskets, hammers, wooden tie plugs, steel tapes, canvas, paper, cardboard, linen tags and asphaltum varnish. Blanks and general information relating to this circular (No. 704) obtainable from this office or offices of assistant purchasing agents, 24 State St., New York, and 614 Whitney-Central Bldg., New Orleans; also from U. S. Engineer offices in Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo., and Chamber of Commerce, Quincy, Ill. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**Mining Machinery.**—Knox Coal Mining Co., F. D. Simpson, president, Barbourville, Ky., will soon open bids on mining machinery.

**Naval Supplies.**—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. May 7, and opened immediately thereafter, to furnish at Navy-yard, Norfolk, Va., etc., quantity of naval supplies as follows: Schedule 4473, building sand, broken stone or gravel; schedule 4474, electric-driven winch; schedule 4475, spruce; schedule 4480, pump leather, wooden fenders, ship fenders, white ash oars; schedule 4481, mirrors; schedule 4483, lubricating graphite grease, lubricating graphite, granular sodium carbonate, lard oil, Indian red; schedule 4485, metallic life rafts; schedule 4486, furnaces; schedule 4489, sand, gravel. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to navy pay office, Norfolk, Va., or to bureau. T. J. Cowie, Paymaster-General, U. S. N.

**Naval Supplies.**—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. May 7, and opened immediately thereafter, to furnish at Navy-yard, Washington, D. C., quantity of naval supplies as follows: Schedule 4475, clay, crushed rock, sand; schedule 4476, caustic soda or potash, resin, rapeseed, petroleum, paraffin and mineral lard oils, nitric and sulphuric acid; schedule 4477, German silver, bar iron, pig-iron, ferro-silicon, ferro-manganese, aluminum, wash metal. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to bureau. T. J. Cowie, Paymaster-General, U. S. N.

**Paving.**—F. J. Von Zuben, acting city engineer, Fort Worth, Tex., receives bids until 9 A. M. April 23 for paving Houston St. from Weatherford to 10th St.; 17,671 square yards pavement and 5490 linear feet gutter; bids on paving on present concrete foundation and on new concrete foundation; following materials to be considered: Vitrified brick, bitulithic, creosoted wood block, rock asphalt, asphaltic concrete, bituminous concrete, Bermudez Lake or Trinidad Lake sheet asphalt and granitoid; specifications and proposal forms on file with City Engineer; certified check \$1000; J. H. Maddox, Commissioner Streets and Public Property.

**Paving.**—W. L. Dodds, County Engineer, 27 Municipal Bldg., Chattanooga, Tenn., receives bids until noon April 20 to construct 1st St., East Chattanooga; plans and specifications on file with County Engineer.

**Paving.**—City of St. Louis, Mo., Room 300, New City Hall, receives bids until noon April 26 for reconstructing North Market St. from Broadway to 15th St.; plans, specifications, form of bid, etc., may be had from Board of Public Improvements.

**Paving.**—City of Morristown, Tenn., E. M. Grant, Mayor, will probably let contract not later than June 1 on about one mile paving; specifications obtainable after May 1.

**Paving.**—Baltimore (Md.) Board of Awards receives bids until April 24 to grade, curb and pave with vitrified block on concrete base Mason and Jenkins alleys between Preston and Hoffman Sts.; approximate quantities—contract No. 19, vitrified block, 880 square yards; concrete curb, 600 linear feet; grading, 180 cubic yards; certified check \$300; specifications and proposal sheets obtained upon application to office of Paying Commission, R. Keith Compton, chairman, City Hall; deposit of \$5 required for specifications; plans and profiles on file with H. Kent McCay, chief engineer; board also receives bids until same date to grade, curb, gutter and pave with sheet asphalt Huntingdon Ave., 25th to 31st St.; 32d St., 33d St., 34th St. and 35th St., all from Charles to St. Paul St. Specifications can be obtained upon application at office Commissioners for Opening Streets, Eugene F. Rodgers, secretary, City Hall, where plans and profiles are on file.

**Paving.**—Proposals received at office of Ward's Engineer, Bascom Sykes, No. 516 Middle St., Portsmouth, Va., until 8 P. M. April 23, addressed to D. F. Appenzeller, chairman Seventh Ward Local Board, for furnishing tools, labor, materials, etc., in paving 30,000 square yards of roadway in certain streets of Seventh Ward; concrete base and bituminous wearing surface; specifications, instructions to bidders and plans may be obtained from Ward's Engineer; bids to be made on blank form attached to specifications.

**Paving.**—Baltimore (Md.) Board of Awards receives bids until 11 A. M. April 24 to construct cement paths through squares between Philadelphia Rd. and Fayette St., Lakewood Ave. to Linwood Ave., in accordance with plans and specifications of Park Commissioners, which may be obtained at office of board, Madison Ave. entrance to Druid Hill Park; certified check \$300; William S. Manning, general superintendent.

**Perforating Machinery.**—T. S. Abernathy, 1907 Second Ave., Birmingham, Ala., wants addresses of manufacturers of machinery for perforating cardboard or paper; perforations to form letters or figures.

**Pipe Line.**—Baltimore (Md.) Board of Awards receives bids until 11 A. M. April 24 for furnishing and installing complete system of underground feeders from high-pressure pumping station, South St., to Courthouse, City Hall and two City Hall annexes; certified check \$500; plans and specifications on file with Clarence E. Stubbs, Building Inspector.

**Pumps.**—H. M. Shannon, Richmond, Tex., wants addresses of manufacturers of small hand-power pumps; vertical and rotary slide valve; glass cylinder.

**Register.**—T. S. Abernathy, 1907 Second Ave., Birmingham, Ala., wants addresses of manufacturers of registers or counters, some-

what smaller but similar to those used in street cars.

**Road Construction.**—Permanent Road Commissioners, W. F. Gill, secretary, Paris, Tex., receive bids until noon May 21 to construct 40 to 43 miles rock roads and various bridges for precinct No. 1; plans and specifications on file after April 20; bids requested on gravel, plain macadam and bituminous macadam; work involves 130,000 yards earth, 3000 yards concrete and 238,000 square yards rock portion of roadways; contracts, specifications, etc., furnished on deposit of \$5; M. Hannah, engineer.

**Road Construction.**—Bids received at clerk's office, Hanover, Va., until noon May 1 to construct  $\frac{1}{4}$  miles gravel road from Henrico county line to Carneal's Store, in Hanover county; plans and specifications on file at clerk's office and at office of P. St. J. Wilson, State Highway Commissioner, Richmond, Va.; certified check \$300.

**Road Construction.**—W. L. Wiggs, general supervisor of roads of Wake county, Raleigh, N. C., receives bids until May 6 to construct one mile of macadam road with binder; roadway to be 12 or 16 feet wide; county will furnish stone in quarry about one mile from site, rock crusher and machinery for quarrying and crushing stone, traction engine, four cars, packer and sprinkler; county will do grading.

**Road Roller.**—L. F. Hobbs, Box 483, Norfolk, Va., wants to lease for 90 days or purchase five-ton tandem steam road roller; full particulars, condition and best price of rental or purchase in first letter.

**Road Machinery.**—Jas. H. Williamson, County Judge, Box 163, Benton, Tenn., wants prices on crusher and road tools.

**Sewer Construction.**—City Commissioners, Mobile, Ala., receive bids until noon May 14 to construct vitrified pipe sanitary sewers through Virginia, Davis Ave. and St. Stephens Road districts, aggregating 26,000 feet 8 to 24-inch pipe; plans and specifications on file with Wright Smith, City Engineer.

**Sewer Construction.**—P. Curran, Mayor, and Commissioners of Westernport, Md., receive bids until 6 P. M. April 23 to lay sewer pipe of various dimensions along River Road St.; plans and specifications on file with William Harvey, civil engineer, and P. Curran, Mayor; certified check \$100; sewer pipe to be delivered on ground by Mayor and Commissioners.

**Sewer Construction.**—City of St. Louis, Mo., Room 300, New City Hall, will receive bids until April 19 for constructing sewers and branches in Gratiot joint sewer district; plans, specifications, form of bid, etc., may be had from Board of Public Improvements.

**Sewerage System and Water-works.** Proposals received by Mayor and Council, Sylvester, Ga., for construction of partial sewerage system and water-works improvements until 5 P. M. May 15, then publicly opened and read; water-works improvements include compound steam duplex air compressor, Westinghouse direct-acting compressor, brick pumproom additions, furnishing and laying 4650 feet six-inch cast-iron pipe, with valves, hydrants and special fittings; sewerage system about three miles, from 8 to 12 inches, with one septic tank; work will be let as a whole to one contractor; bids received for sewerage system and water-works improvements separately and for both; certified check 5 per cent. amount of bid; plans and specifications may be seen at office of R. B. Pollard, City Clerk, or office of engineer, J. B. McCrary Company, Atlanta, Ga.; rights reserved.

**Shoes.**—See "Cottonseed Oil, etc."

**Standpipe.**—Corpus Christi, Tex., wants prices on metal standpipe of 100,000 or 150,000 gallons capacity. Address Clark Pease, Mayor, or the Assistant City Engineer.

**Skylights.**—See "Building Materials."

**Skylights.**—J. S. Starr, Rock Hill, S. C., wants prices on skylights with wire glass, 12 and 15-inch ventilators.

**Steel.**—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa., wants steel building, approximately 250x70 feet.

**Steam Shovel, etc.**—C. S. Slayback, 415 S. Akard St., Dallas, Tex., wants catalogues and prices on complete steam-shovel equipment; also data (approximate cost, etc.) on removal of material—sand, earth or gravel.

**Syrup-mill Machinery.**—W. W. Kyle, Beaumont, Tex., wants prices on machinery and evaporators for cane-syrup mill not to exceed 500 gallons capacity.

**Telephone Equipment.**—Dotson Branch Home Telephone Co., Howard Grimsley, secretary, Route No. 8, Cookeville, Tenn., will need telephones, wire, etc.

**Telephone Equipment.**—H. H. Holder,



Bethune, S. C., will receive prices on machinery and supplies for Bethune Telephone Co.'s proposed five-mile line.

**Wagon.—See "Laundry Machinery."**

**Water-works.—See "Sewerage System and Water-works."**

**Water-works Material.—**Port Lavaca Manufacturing Co., J. H. Shell, manager, Port Lavaca, Tex., will want water-works material.

**Water-works.—**City of St. Louis, Mo., Room 300, New City Hall, receives bids until April 23 for making certain changes in settling basins at Chain of Rocks; plans and specifications on file with Board of Public Improvements.

**Water-works Construction.—**Proposals for construction of 24,000,000-gallon filter plant, settling basins, piping, coagulant house and superstructure, pumping station, low service pumping machinery, water-tube boilers, stokers and superheaters, addressed to Commissioners of Water-works, received at water-works office, City Hall, Erie, Pa., until 2 P. M. May 17, then publicly read; bids on forms obtainable after April 20 at office of

commissioners, or from engineers, Chester & Fleming, Union Bank Bldg., Pittsburgh, Pa.; rights reserved. For further information, address engineers or commissioners; Geo. C. Gensheimer, secretary of latter.

**Water-works Construction.—**City of Pleasant Hill, Mo., S. N. Gordon, Mayor, will open bids about May 1 on 65,000-gallon tank on tower; pump-house with foundation; brick construction; two 200 G. P. M. pumps; 20-horse-power motor; 20-horse-power oil engine; 35-foot well, concrete, 16 feet across; plans by Rollins Westover, Kansas City, Mo.

**Water-works and Electric-light Plant.—**City of Wagoner, Okla., will receive bids for complete light plant, six miles of three-line wire and extension to water-works, including pumps, engines, etc.; Benham Engineering Co., 714 Campbell Bldg., Oklahoma City, Okla., prepared plans; contract will be let in about 10 days; John B. Cook, Mayor.

**Well-drilling Equipment.—**Marguerite Oil Co., Edward Laguerre, engineer, Box 106, Evangeline, La., wants prices on rotary rig, 8% well casing, 6-inch well casing and 4-inch drill pipe.

the owners and that this enables the purchaser to pay for his plant in from six to 12 months, and as there is such an abundance of crude and fuel oil and natural gas to be obtained, there is no cause for lack of fuel for these engines. Another important installation is that for the city of Decatur, Tex., for an electric-light plant. The contract for this installation was made after a thorough investigation by the city authorities, in which the economy of the Bessemer oil engine was particularly considered. Another contract of importance on account of the large field for such sales is that for the installation at Van Horne, Tex., for the Hazel Mining & Milling Co., with main offices at Dallas. This contract is for two large fuel-oil engines to operate the new mine at Van Horne in connection with the Sutton-Steel-Steel Company's dry concentrating process of ore extraction. This process is the result of 14 years of experience, and the Sutton-Steel-Steel Company of Dallas, Tex., guarantees that it will extract 90 per cent. of all ore ingredients, which represents a decided improvement in mining processes. As the Van Horne mine will be equipped for the dry process and with Bessemer fuel-oil engines, it will be a model in this respect and should attract attention of mine owners in general. The Sutton-Steel-Steel Company has been compelled to double the capacity of its plant, and is employing a night and day force to fill its orders for machinery from all parts of the world where mining is carried on. The Bessemer Gas Engine Co.'s Southern offices are located in Parkersburg, W. Va.; Tulsa and Bartlesville, Okla.; Joplin, Mo., and Dallas, Tex. The developments in crude-oil and natural-gas fields and the demand for machinery operated with these fuels in the South and Southwest have resulted in a large volume of business for the Bessemer Gas Engine Co.

side of the scale shows the duty in millions of foot-pounds per thousand pounds of steam developed by a perfect engine, while the other edge gives the steam consumption in pounds per horse-power hour. With this chart and scale in his possession the engineer has the equivalent of steam and entropy tables, also tables for converting British thermal units to jet velocity, steam consumption and duty without computation. Precise directions for using the scale are printed on the back of the diagram and its use is illustrated. Copies of the scale and diagram will be sent by the company to engineers and others interested in the subject of steam consumption in engines, turbines, etc.

#### Northrop Looms in Southern Mills.

Cotton Chats No. 113, published by the Draper Company, Hopedale, Mass., contains information regarding the number of looms that can be operated by one weaver and the efficiency of such looms, including those used in Southern mills. An interesting letter on these points from Robert S. Mebane, president of the Republic Cotton Mills, Great Falls, S. C., is included. The front page contains a photograph of a weaver in the Aragon Cotton Mills, Rock Island, S. C., who is unable to walk without crutches, but nevertheless operates 20 Northrop looms. This instance demonstrates that a standard of 16 Northrop looms per weaver, established years ago, falls far short of the number that can be operated under usual conditions at the present date.

#### H. W. Harry's All-Metal Silos.

After several years of experimenting the H. W. Harry Manufacturing Co. of Kansas City, Mo., and Massillon, O., has been enabled to build all-metal silos, for which the company states it gives an absolute guarantee for five years' use without appreciable deterioration. This guarantee indicates the long life reasonably to be expected beyond the five years. A pamphlet issued by the company includes information as to the value of silos; eight reasons why the farmer should have a silo; a statement of the natural advantages of using silage; illustrations, tables of dimensions, weights and capacities, sizes of plates used in building silos, etc. The pamphlet also contains illustrations of "Pioneer" metal culverts, stock and storage tanks, railroad station tanks and galvanized steel grain bins.

#### Flake Graphite as a Lubricant.

Friction is reduced by the use of oil and grease by imposing a film between two bearing surfaces, which keeps them from coming into immediate contact. Flake graphite, by attaching itself to the bearing surfaces, polishes them and renders them smooth, thus overcoming the initial friction so that it is a lubricant in itself. Graphite combined with oil and grease gives the double effect of two lubricants acting conjointly. Carefully conducted experiments have shown that pure flake graphite properly mixed with oil and grease will diminish frictional resistance 25 per cent. over oil or grease alone. For these reasons graphite is extensively used in conjunction with other lubricants. The Chester Graphite Co., Chester Springs, Pa., manufacturer of the "Hexagon" brand of flake graphite and graphite lubricants, illustrates and describes these products in the booklet and circulars issued by the company. The "Hexagon" flake graphite is made in three grades or sizes, large, No. 100; medium, No. 200, and small, No. 300, to best adapt it to the use to which it is to be put. This graphite is also sold ready mixed with grease in the form of graphite cup grease, graphite axle grease, graphite pipe-joint compound, and graphite motor grease. The circulars describe the advantages of each and give prices.

#### Ferro-Concrete Construction.

The advantages of ferro-concrete construction are stated in the catalogue issued by the Southern Ferro-Concrete Co., Charles Loidans, president, Atlanta, Ga. Among the advantages mentioned are strength, stability and durability; freedom from vibration; imperviousness of floor to water and dust; rapidity of construction; low cost of maintenance and insurance; adaptability to architectural treatment and the fireproofness of construction. Another advantage is that foundations and columns in a building may be so made, at small additional cost, that additional stories may be built. This is a company of engineers and contractors for all types of reinforced construction and will work in connection with architects and furnish them all information for specifications and structural designs. Illustrations of typical concrete construction, including foundation work, ferro-concrete columns,

## INDUSTRIAL NEWS OF INTEREST

### Heating Contract Awarded.

The contract for heating the dormitory buildings of the University of North Carolina, at Chapel Hill, has been awarded to B. MacKensie, Greensboro, N. C. The architects for these buildings are Milburn, Heister & Co., Union Savings Bank Building, Washington.

### Little Delay from Fire.

The plant of the Buffalo Foundry & Machine Co., Buffalo, resumed operations on April 15 after the short delay caused by the fire which occurred on April 11. The fire only did about \$10,000 damage, most of that being in the roof. The building is 145x320 feet and contains 175,000 square feet of ribbed glass, with steel construction, making it practically fireproof, excepting the roof.

### Chinese Studying the Telephone.

Three graduates of the Government Technical College at Shanghai, China, are engaged in the practical study of telephony in the student course of the Western Electric Co. of New York in its Hawthorne plant. Following this course these young Chinese will spend some time with one of the largest operating telephone companies, and upon completion of their studies will return to their native land.

### Changes in the Koppers Company.

The H. Koppers Company, incorporated under the laws of Maine with capital stock of \$500,000 fully paid, has taken over the business of H. Koppers, by-product coke and gas-oven constructor, Joliet, Ill., and will remove its offices about May 1 to the Mallers Bldg., Wabash Ave. and Madison St., Chicago. The officers at present are H. Koppers, president, Essen, Germany; J. C. McMahon, vice-president; J. M. Butler, treasurer, and W. V. Hartman, secretary.

### Receiver's Sale of Railroad.

Property of the Enid, Ochiltree & Western Railroad Co., consisting of 13 1/2 miles of track, 34 miles of grading, 112 miles of right of way, one-half interest in nine townships, 24 acres of land for terminals, two railroad motor cars, and other equipment, office furniture, etc., is offered in our advertising columns for sale at Dalhart, Tex., May 28, 1912. This sale will be made under the decree of the District Court, and full particulars may be obtained from H. G. Hendricks, Receiver, Amarillo, Texas.

### Holophane Organization with General Electric Co.

The General Electric Co., Schenectady, N. Y., has recently completed negotiations for taking over the entire Holophane organization, Newark, O., including the sales and manufacturing departments. The Fostoria Glass Specialty Co., Fostoria, O., will be united with the Holophane organization. The sales and engineering parts of the business will be under the direct charge of V. R. Lansingh, while the manufacturing work will be under the charge of E. O. Cross.

### Gould Company of Oklahoma City.

The Gould Company, recently organized with Charles N. Gould president, which has been previously extensively referred to in these columns, has removed its offices from Muskogee to Oklahoma City, Okla. The company was organized for the purpose of developing industrial enterprises in Oklahoma and neighboring States. The properties include oil fields, coal fields, asphalt deposits,

salt claims, iron-ore deposits, sites for gypsum plants, granite quarries, lead and zinc deposits, sites for Portland cement plants, glass sand, sites for limekilns and clay-product plants, limestone quarries, etc. The various properties obtained will be developed and sold as industrial properties or held as investments. The company also does a general brokerage business in this line. The officers of the company are Charles N. Gould, W. S. Thompson and J. M. Postelle.

### Cold Storage and Ice Plants.

Among the installations of refrigeration machinery and ice plants for which John Hague, refrigeration engineer and contractor, 1228 Pine St., St. Louis, Mo., has recently received contracts, are the following: A 20-ton ice-cream plant for the Banner Creamery Co., St. Louis; a cold-storage room and the piping for the Pevely Dairy Co., St. Louis, and another for the same company at Albers, Ill., with an installation of a boiler of 150 horse-power; a 5-ton ice plant and cold-storage room for the Red Bud Creamery Co., Red Bud, Ill.; a 3-ton refrigeration plant for Winfree & Goebel, Nashville, Ill.; a 10-ton ice-cream plant for the Du Quoin Bottling Co., Du Quoin, Ill.; enlarging the storage-rooms of the R. Hartman Produce Co., St. Louis; building a dry ice-cream hardening-room for Blattner Bros., Wells-ville, Mo., and a similar plant for the Cairo Creamery Co., Cairo, Ill.

### Auction Sale of \$100,000 Equipment Stock.

The bankrupt auction sale of the entire stock and outfits of the Cincinnati Equipment Co., Cincinnati, O., commencing April 29, is noted in our advertising columns. The stock and equipment is located at Cincinnati, Ivorydale and Glendale, O.; Newark and Stockton, N. J.; Muskogee, Okla.; Suffolk, Va.; Bellwood, Pittsburgh and Philadelphia, Pa., and several other points. A detail statement of the equipment and of the various points at which it is located is given in a catalogue regarding the auction sale. The sale will begin at Cullom's Station, Cincinnati, at 10 o'clock A. M. April 29, continuing on Wednesday, May 1, at Bellwood, Pa. Among the equipment to be sold are railroad contractors' outfits, locomotives, steam shovels, dippers, road levelers, road rollers, Lidgerwood hoisting engines and unloaders, steam drills; dump, ballast, flat and hopper cars; electric generators, steam launch, concrete mixers and buckets, water-feed heaters, gasoline engines, steam pumps, traction cars, electric transformers, rock crushers, boilers, sand and pulsmeter pumps, well drills, derricks, cableway engines, etc.

The catalogue and other information will be promptly sent on request to the auctioneers, The Ezekiel & Bernheim Company, 334 Main St., Cincinnati, O.

### City and Mining Power Plants.

Among the recent sales contracts secured by the Dallas branch of the Bessemer Gas Engine Co., with main office at Grove City, Pa., are the following for installation in Texas: An electric-light plant to be installed at Anson, consisting of two double-cylinder oil-fuel engines, which will enable the company to generate electric current at a low rate. It is stated, in this connection, that the Bessemer oil engine has become prominent in electric-light and power plant installations. As a generating power it is claimed that its efficiency insures good returns for

## TRADE LITERATURE.

### Railway Electric-Light Fixtures.

The Safety Heating and Lighting News, Vol. 2, No. 5, published by the Safety Car Heating & Lighting Co., 2 Rector St., New York, contains illustrations and descriptions of a complete line of electric-lighting fixtures for railway cars. A Missouri Pacific dining car with electric center lamps and bracket lamps is shown in one of the illustrations. An interesting table showing comparative costs of installation and maintenance of Pintsch lights and electric lights is also included.

### Crocker-Wheeler Electric Fans.

The approach of the warm season is bringing out information from electric-fan manufacturers regarding their latest types of fans and their advantages. The Crocker-Wheeler Company, Amper, N. J., has issued its electric-fan bulletin 147, showing the comparative simplicity, efficiency and lightness of its latest fans as compared with older types. Crocker-Wheeler exhaust fans for drawing the air out of the room, thus admitting fresh air through the doors and windows, are also shown. This bulletin will be sent to interested persons on request.

### The J-M Power Expert.

In order to more fully cover the various lines of J-M products than was permitted in the J-M Packing Expert, the H. W. Johns-Manville Company, 813 Superior Ave., Cleveland, O., now publishes the J-M Power Expert. In its April number illustrations are included of the J-M Vitribestos curtain for theaters and the J-M transite asbestos wood for making fireproof booths for moving-picture installations. A booklet illustrating and describing these asbestos booths, fireproof curtains and other similar equipment has just been issued and will be sent to interested persons on request.

### De Laval Steam Scale and Diagram.

The Moller diagram is now generally known to engineers as a convenient means of determining the heat available from the expansion of steam, and also for determining the efficient ratio of an engine or turbine. A steam scale and diagram has been devised and published by the De Laval Steam Turbine Co. of Trenton, N. J., which is a modification of the Moller diagram and eliminates the difficulties found in its use. This steam scale is a graduated measuring rule bearing four different scales. The first, having uniform graduations, may be applied to the chart to measure directly the British thermal units available between given initial and final conditions of the steam. A second edge of the rule bears a scale showing the resulting velocity of the steam in expanding through a nozzle. One edge of the under



slabs, beams and girders, and buildings under all stages of construction are shown. Many complete concrete buildings in Southern cities are also included in the illustrations. The company has recently been awarded the contract for building the structural portion of the reinforced concrete Hotel Ansley by J. B. Pound, president of the Hotel Ansley Investment Co., 817 Forsyth Bldg., Atlanta, Ga. This building will be 15 stories in height, approximately 100x110

feet, will contain 306 guestrooms, and is designed to be one of the best hotel structures in the South. The St. Johns Construction Co., 817 Forsyth Bldg., Atlanta, Ga., to whom the contract for the general work has been awarded, is now taking sub-bids for the construction of the general work, and the contracts for this work will be let within a few weeks. The architect is Capt. Brinton B. Davis, Louisville, Ky.; approximate cost, \$750,000, complete.

## MOTOR VEHICLES AND TRACTORS.

### Fire Department to Be Motorized.

The director of the department of public safety in Pittsburgh has prepared advertisements for bids on six combination chemical and hose trucks, five motor patrols, one tractor for a fire engine and two roadsters for the use of the superintendent and assistant and superintendent of police. It is said that within four months the apparatus will have been secured and placed in use. Several motor fire trucks are at present in use in the city and have given such satisfaction that more are wanted. The hilly streets make this class of apparatus highly desirable. It is said that with motors an annual saving of \$200,000 would result; that the horseshoeing and feeding bills of the horses in one engine-house alone are from \$700 to \$800 annually, while the cost of upkeep of the motor machinery would be from \$70 to \$80 for the same time. Director John M. Morin, in speaking of his move, said: "While there has been some opposition to my plan to motorize the fire and police departments, the opponents laying great stress on the initial cost necessary, experience gathered by other cities has shown that in the long run in a city of this size the saving annually is great. With the adoption of the right class of machines it is known that the cost is far lower than with our present apparatus. This, to my mind, is the greatest argument for the adoption of the motor vehicles."

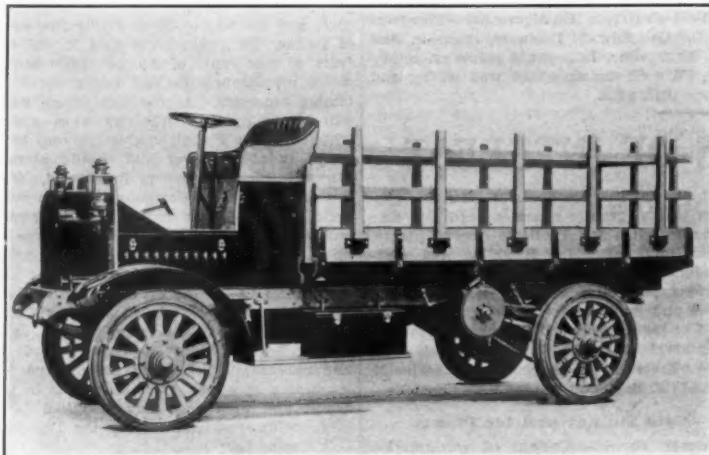
### Jarvis-Huntington Motor Truck Catalogue.

The 2-ton, 3½-ton and 5-ton Jarvis-Huntington trucks, manufactured by the Jarvis-Huntington Automobile Co., Huntington, W. Va., are described in detail with numerous illustrations in a 32-page catalogue issued by the company. These trucks are designed for strength and simplicity and have been thoroughly tested in the mountains of West Virginia. Every part of the mechanism is capable of easy and speedy adjustment or removal. It is stated that all similar parts are interchangeable. This company has manufactured light and medium-weight locomotives and road engines since 1876, which experience has an effective bearing upon the quality and efficiency of the motor trucks which are now added to its manufactures. All parts of the mechanism, such as the transmission, motor, brakes and rear axles are made under the direct supervision of the company. The 5-ton truck has been previously described in these columns, and the catalogue supplies additional information as to the form of bodies, cost, etc., of the various sizes. These include standard stake bodies, oil tanks; hotel bus, both open and closed types; palace-car observation trucks, furniture-car bodies, ambulance, flare-board delivery bodies and screened express trucks. The catalogue will be sent to interested persons on request. A guarantee against defective material and workmanship for 10,000 miles is given.

### The Jeffery Motor Truck.

The accompanying illustration shows the 1½-ton Jeffery motor truck which was exhibited at the Chicago Motor Truck Show and has since been extensively tested preparatory to marketing a service truck of this type. The reputation of the Thos. B. Jeffery Company, Kenosha, Wis., manufacturer of the Rambler motor cars and the Jeffery truck, is based on 40 years of machine shop experience and its policy of efficient service to the public. Over 11 years has been spent in the making of automobiles. Its plant contains 18 acres of floor space, and 96 per cent. of its product is made in its own plant, which gives the company advantages of considerable importance in the building of automobiles and motor trucks. The Jeffery truck has a load rating of 3000 pounds; the motor consists of four vertical cylinders of 38 horse-power, located under the seat; the lubrication is combined forced-feed and splash; cooling is by water circulation; ignition by Bosch high-tension system; it has three speeds forward and one reverse; center motor control levers; double chain drive on rear wheels. The wheel base

is 120 inches, tires 34x4 inches single front and 34x3 inches dual rear. The steering control is on the left side. Speed runs up to 15 miles per hour. The distribution of the load allows 60 per cent. on rear axle. The chassis



THE JEFFERY 1½-TON MOTOR TRUCK.

is sold with or without bodies, and the latter will be made to order or the standard type furnished as required. The extensive acquaintance of the automobile users in the South with the Rambler car and the establishment of agencies for the sale of these cars bespeaks a quick introduction and extensive use of the Jeffery truck made by the same company.

### Essentials of Motor Truck Value.

The way in which the International Motor Co., 57th St. and Broadway, New York, considers the essentials of motor-truck value and strives to incorporate these essentials in the development of its motor-truck business is stated by R. W. Hutchinson, Jr., M.E., of

ments for their users for the greatest number of years of actual service. Twelve years of this kind of proof are behind Mack trucks, seventeen years behind Saurer, ten years behind Hewitts. Of also equal importance with years of service is the regularity of service. Certainty of the prompt removal of material and delivery of goods, certainty that your truck will be on duty and not in the repair shop when it is wanted—this is a business value that cannot be measured in dollars and cents. The Bell Telephone system uses 51 of our trucks and has others on order. The French War Department has subsidized privately-owned Saurers as auxiliary equipment, and other European Governments employ Saurers in mail and transportation service. Hewitts are conspicuous in transportation service in New York city, particularly coal hauling.

off, Church & Partridge, New York, sold to Amador Andrews, Baltimore, and equipped with a dump body; a 3-ton Packard truck to the Pikesville Dairy Co., and one to Street & Corkran, commission merchants, Baltimore, both of these being repeat orders; six Mack trucks have been sold by the Baltimore branch of the International Motor Co., 57th St. and Broadway, New York, during the past week; a 1-ton Buick truck, made by the Buick Motor Co., Flint, Mich., has been purchased by George Stieber, Towson, Md.; C. R. Hesson, 1724 W. Lafayette Ave., Baltimore, has purchased a 1000-pound Martin truck; a 1-ton Board truck, manufactured by the B. F. Board Motor Truck Co., Alexandria, Va., has been sold to Fahrney Bros., Hagerstown, Md.; a 4½-ton Kelley truck to Geo. Brehm & Son, Baltimore, making the fifth Kelley truck they have in use; J. L. D. Neale of Washington has purchased a 1-ton Federal truck, manufactured by the Federal Motor Truck Co. of Detroit; Norwood Bros., Baltimore, last week sold Lincoln delivery wagons, manufactured by the Lincoln Motor Car Works, Chicago, to S. Snyder, 1323 Harford Ave., Baltimore; A. W. Zille, Windfield, Md., and H. A. Burnes, 400 E. Lanvale St., Baltimore; also Elmore valveless cars, manufactured by the Elmore Manufacturing Co., Detroit, to Carl G. Sprague, 302 Hanover St., and to J. E. Henderson, Baltimore; Seltz trucks, manufactured by the Seltz Motor Truck Co., Detroit, to Henry W. Schloman, 1033 Hanover St., Baltimore, and John Makowski, Brooklyn, Md. The Kelley truck is manufactured by the Kelley Motor Truck Co., Springfield, O.

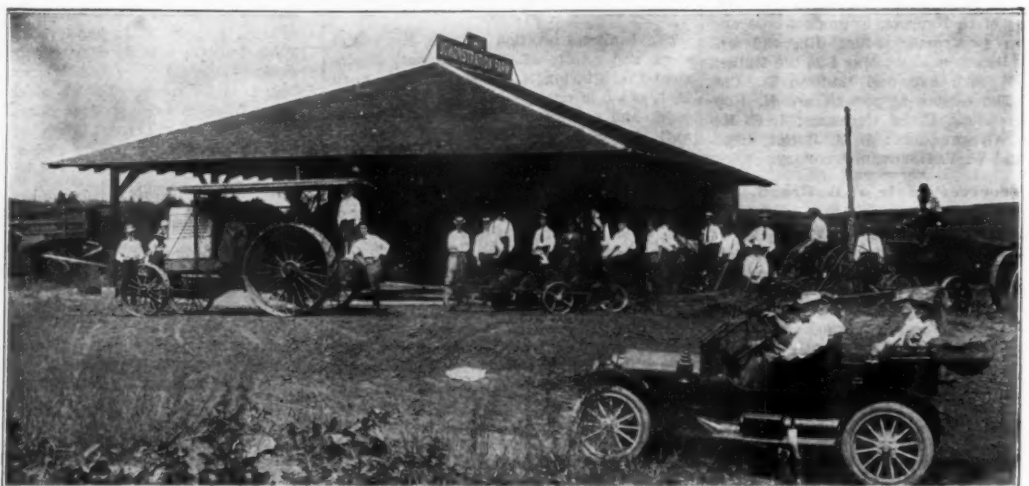
### Tractors and Other Farm Machinery in the South.

The International Harvester Co.'s Service Bureau is making a persistent effort to add something to the forces and influences that are now working toward the betterment of agriculture in the South, and to that end has established demonstration farms at Brookhaven, Miss.; Marion, Ala., and Trimble, Ga. Although these farms have been operating less than a year, it is seen that the Harvester company is starting demonstrations which promise to be of far-reaching effect in their respective communities. Among the tests made will be found deep-plowing demonstrations, the use of different leguminous crops for enriching the soil, a comparison of the use of fertilizer spreader with hand methods, and the effect of dynamiting the soil. The Trimble (Ga.) station is shown in the illustration, with farm tractors, plows, etc. An effort will also be made to improve certain kinds of grains with the hope of obtaining varieties that are more nearly adapted to the South. Several acres on each farm will be devoted to a

All this proof of regularity of service is evidence of the long-life value of these trucks. Profitable long life, such as is behind these trucks, is proof of economy of upkeep also."

### Recent Motor Truck Sales.

In addition to the sales of motor trucks previously noted for Baltimore and vicinity, the following have recently been made: A 5-ton Alco truck to Emerson & Morgan Coal Co., Baltimore; a 1500-pound Chase truck, manufactured by the Chase Motor Truck Co., Syracuse, N. Y., to W. L. Lilly, Ellicott City, Md.; a Ford light delivery, manufactured by the Ford Motor Co., Detroit, sold to Thomas P. Cunningham, Baltimore, for poultry and produce delivery; another Ford de-



INTERNATIONAL HARVESTER CO.'S DEMONSTRATION FARM, TRIMBLE, GA.

the International Motor Co. Among other things he states that the company entered the motor-truck field with the purpose of solving commercial transportation problems scientifically. That was the great need and the great engineering and business opportunity. The organizers of the company had a big purpose to accomplish with promise of big results, to provide economical and efficient transportation for every need of any business man. Continuing, he states that "the most essential quality in any mechanical equipment is long life, for long life means slow wear. Slow wear means not only economy in use, but uninterrupted, dependable service. For its equipment the company adopted the trucks with the longest records of profitable service, trucks which have proved their value as invest-

ment to Rhode Bros., Baltimore; an Alco truck, manufactured by the American Locomotive Co., 1836 Broadway, New York, to the James Robertson Manufacturing Co., Baltimore; a Martin truck, manufactured by the Martin Carriage Works, York, Pa., to Ridgeley & Ridgeley, Pikesville, Md., for the delivery of groceries and meats; a 3-ton Rapid truck, manufactured by the Rapid Motor Vehicle Co., Pontiac, Mich., to the American Can Co., Baltimore; a 3-ton Packard truck, made by the Packard Motor Car Co., Detroit, and sold by the Mar-Del Mobile Co., Baltimore, to the Independent Ice Co., Baltimore; another 3-ton Packard for W. H. O'Dell, Harrisonville, Pa.; a 4-ton Peerless truck, made by the Peerless Motor Car Co., Cleveland, to the Peerless Motor Transfer Co., Washington; a 4½-ton Commer truck, made by Wyck-

farmer's seed test, where the seed, grain and cotton, from several hundred farmers will be planted. At the proper time during the season these farmers will be invited to visit the field and compare the different varieties. This will put the different strains in competition under exactly the same conditions. Plans for the future include the extension of this method of comparison. The idea is to show possible improvements in the varieties of grain and the farming implements used, and it is believed that comparison under similar methods of cultivation is the most forcible way and the most effective method of bringing about such improvements. The International Harvester Co.'s Service Bureau's influence on agriculture, the improving of crops and the effort to stimulate increased yields is constantly being mani-



tested by the number of trophies, farm machines and other forms of prizes that are being offered for various contests and competitions. A Virginia farmer won the Harvester company's \$1000 silver trophy at the New York Land Show for grain growing, thus helping to spread the South's fame as a corn-producing area.

#### New York Motor Truck Parade.

Nearly 500 motor trucks of various descriptions passed on parade the entire length of the route from Battery Place, New York city, to 125th St. on the afternoon of April 12. The parade was held under the management of the Motor Truck Club, and made an impressive lesson on the value of commercial vehicles and was a revelation to the public of the giant strides which are taking place in the development of motor-vehicle transportation. Many of the trucks were on actual duty carrying the merchandise of their owners, which was delivered to customers at the close of the parade. It extended for a distance of about two miles, and over 50 makes of trucks were in line, ranging from the big 10 and 12-ton coal carriers down to the light delivery wagons, both electric and gasoline propelled. One of the features of the parade was the Saurer "Pioneer Freighter," which crossed the continent with a load last summer. The General Vehicle Co. was represented by its veteran, "Mary Ann," which has seen service for 12 years and is still running. The Pierce Arrow truck with its silent worm-gear drive was in evidence. The Autocar, which was designed for Army service, and showing evidence of having performed it, led the procession of a large variety of Autocars. It was the car that recently made an Army test trip of 1500 miles from Washington to Atlanta and Indianapolis. The big Mack and Hewitt coal trucks were very noticeable. There were trucks and bodies for almost any form of service, and a long line of observers found many points of interest and the people were evidently strongly impressed with the display. The following were among the manufacturing companies represented: Alco, 14 trucks, manufactured by the American Locomotive Co., 1886 Broadway, New York; Anderson, 1, the Anderson Carriage Manufacturing Co., Anderson, Ind.; Atterbury, 1, the Atterbury Motor Car Co., Buffalo, N. Y.; Autocar, 46, the Autocar Co., Ardmore, Pa.; Baker, 2, the Baker Motor Vehicle Co., Cleveland; Bronx, 1, the Bronx Electric Truck Co., Bronx, New York; Bulck, 1, the Bulck Motor Car Co., Flint, Mich.; Cadillac, 1, the Cadillac Motor Car Co., Detroit, Mich.; Cass, 1, the Cass Motor Truck Co., Port Huron, Mich.; Champion, 1, the Champion Wagon Co., Owego, N. Y.; Commer, 1, Wyckoff, Church & Partridge, New York; Chase, 6, the Chase Motor Truck Co., Syracuse, N. Y.; Couple Gear, 7, the Couple Gear Freight & Wheel Co., Grand Rapids, Mich.; Dayton, 2, the Dayton Auto Truck Co., Dayton, O.; Federal, 1, the Federal Motor Truck Co., Detroit; Garford, 1, the Garford Co., Elyria, O.; "GMC", 20, the General Motors Co., Detroit; "G. V.", 1, the General Vehicle Co., Long Island City, N. Y.; Grabowsky, 4, the Grabowsky Power Wagon Co., Detroit; Gramm, 1, the Gramm Motor Car Co., Lima, O.; Hewitt, 9, the International Motor Co., 57th St. and Broadway, New York; Hupp Yeats, 1, the R. C. H. Corporation, Detroit; Knox, 14, the Knox Automobile Co., Springfield, Mass.; La France, 1, the Hydraulic Truck Sales Co., 177 Broadway, New York; Landsen, 1, the Landsen Co., Newark, N. J.; Lauth-Juergens, 3, Lauth-Juergens Motor Car Co., Chicago; Little Giant, 4, the Chicago Pneumatic Tool Co., Chicago; Locomobile, 1, the Locomobile Co. of America, Bridgeport, Conn.; Mack, 25, the International Motor Co.; Mals, 8, the Mals Motor Truck Co., Indianapolis; McIntyre, 2, the W. H. McIntyre Co., Auburn, Ind.; Mercedes, 5, the Daimler Import Co., 452 Fifth Ave., New York; Packard, 8, the Packard Motor Car Co., Detroit; Peerless, 7, the Peerless Motor Car Co., Cleveland, O.; Pierce Arrow, 9, the Pierce Arrow Motor Co., Buffalo, N. Y.; Plymouth, 1, the Plymouth Motor Truck Co., Plymouth, O.; Pope-Hartford, 2, the Pope Manufacturing Co., Hartford, Conn.; Ross, 1, Louis S. Ross, Newtonville, Mass.; Reo, 3, the Reo Motor Co., Lansing, Mich.; Sampson, 11, the Sampson Alden Manufacturing Co., Detroit, Mich.; Saurer, 12, the International Motor Co.; Speedwell, 2, the Speedwell Motor Car Co., Dayton, O.; Studebaker, 4, the Studebaker Corporation, Detroit; Universal, 4, the Universal Motor Truck Co., Detroit; Victor, 1, the Victor Motor Truck Co., Buffalo; Waverly, 1, the Waverly Co., Indianapolis; White, 5, the White Co., Cleveland. Several additional cars entered the parade after the official entries had been closed.

## FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

#### Review of the Baltimore Market.

Office MANUFACTURERS RECORD,

Baltimore, Md., April 17.

There was considerable activity in the Baltimore stock market during the past week, especially in United Railways common, the shares of the Consolidated Gas, Electric Light & Power Co. and the bonds of the G. B. S. Brewing Co. Considerable advances were accomplished in the latter.

In the trading United Railways common sold from 20½ to 22, with last sale at 21½; do. incomes, 65½ to 67½; do. funding 5s, 87½ to 88; do. notes, 100¼ to 100½; do. 4s, 85¼ to 85; United Electric Light & Power 4½s, 94½; Consolidated Gas, Electric Light & Power common, 108 to 115; do. preferred, 114 to 115; do. 4½s, 90½ to 90¾; do. notes, 100; Consolidated Gas 4½s, 98½ to 98; Seaboard Air Line common, 26 to 25; do. preferred, 51; Seaboard 4s, stamped, 87½; do. adjustment 5s, 80½; Mt. Vernon-Woodberry Cotton Duck 5s, 75½ to 75¾; G. B. S. Brewing common, 3¼ to 4; do. income bonds, 7 to 13, with last sale at 12; do. 4s, 41 to 51½, with last sale at 50½.

Bank stocks sold as follows: Farmers and Merchants', 50½ to 51; Merchants', 183; Mechanics', 28½. Maryland Casualty sold at 97; Baltimore Trust, 165; Mercantile Trust, 152½; Fidelity & Deposit, 150; Maryland Trust common, 110; do. preferred, 118.

Other securities were traded in thus: Charleston Consolidated Electric 5s, 95½ to 96; Baltimore City 4s, 1957, 100½; do. do. 1926, 100½; do. do. 1925, 100½; do. 3½s, 1930, 94; do. 4s, 1928, 100½; do. do. 1961, 100½; do. 3½s, 1928, 95; Fairmont & Clarksburg Traction 5s, 101 to 101½; Northern Central Railway stock, 130; Atlantic Coast Line Convertible debenture 4s, 103½ to 104; Atlantic Coast Line of Connecticut stock, 275 to 272; Atlantic Coast Line 4s, certificates, 85¼; do. consolidated 4s, 95; Atlantic Coast Line Railroad stock, 142 to 141½; do. Connecticut 5s, certificates, 105; do. do. 5-20s, 92½; Baltimore & Annapolis Short Line 5s, 77¼ to 77; Consolidation Coal refunding 5s, 93½ to 93½; do. stock, 104¾ to 105; Chicago Railways 5s, 101½; Erie Railroad, 37½; Houston Oil, dividend certificates, 83¾; do. common, trust certificates, 10¼ to 10½; do. preferred, trust certificates, 63 to 62½, with last sale at 62½; International & Great Northern Corporation, 49¼ to 51; Augusta & Aiken preferred, 82; Georgia Southern & Florida second preferred, 81¼ to 81½; do. 5s, 107¼; Baltimore Electric preferred, 46½ to 46½; do. 5s, stamped, 98½ to 99½; Maryland Electric 5s, 99½; Milwaukee Refunding 4½s, 95; Baltimore, Sparrows Point & Chesapeake 4½s, 97 to 97¼; Fairmont Coal 5s, 96½; Fairmont & Clarksburg Traction notes, 100; New Orleans, Mobile & Chicago 1st 5s, 92½ to 92½; Norfolk Railway & Light 5s, 100¼; do. stock, 28; Maryland 3s, 1914, 97½; do. 3½s, 1927, 95; Pennsylvania Water & Power common, 66½ to 68½; do. 5s, 92 to 92¼; Carolina Central 4s, 93½ to 93½; Western Maryland 4s, 87½; Macon, Dublin & Savannah 5s, 101½; Virginia Century, 85½; Detroit United 4½s, 79; Georgia & Florida common, 6 to 6¼; Mobile Water 4½s, 1939, 100½; Milwaukee Railway & Light 5s, 1926, 104½; Washington, Baltimore & Annapolis 5s, 86¾.

#### SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended April 17, 1912.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast Line.....	100	141	
Atlantic Coast of Conn.....	100	271	275
Fairmont & Clarks. Trac. Pfd.....	100	82	
Georgia Sou. & Fla.....	100	34	36
Georgia Sou. & Fla. 2d Pfd.....	100	81½	83½
Maryland & Pennsylvania.....	100	34½	36
Norfolk Railway & Light.....	25	28	30
United Rys. & Ele. Co.....	50	21½	21¾
Virginia Ry. & P. Com.....	100		48½
<b>Bank Stocks.</b>			
Bank of Baltimore.....	100	163	170
Citizens.....	10	41½	
Drovers & Mechanics.....	100	205	
Farmers & Merchants.....	40	50	51½
First National.....	100	132	
German.....	100	110	
Howard.....	10	14	

Mechanics'.....	10	28½	
Merchants'.....	100	183	185
Western.....	20	38	
<b>Trust, Fidelity and Casualty Stocks.</b>			
American Bonding.....	25	75	
Baltimore Trust.....	100	165	
Colonial Trust.....	50	29	
Fidelity & Deposit.....	50	152	
Maryland Casualty.....	25	97	
Maryland Trust.....	100	110½	
Maryland Trust Pfd.....	100	117½	118½
Mercantile Trust & Deposit.....	100	152	
U. S. Fidelity & Guaranty.....	100	180	

<b>Miscellaneous Stocks.</b>			
Ala. Con. Coal & Iron.....	100	50½	
Baltimore Electric Pfd.....	46½	46½	
Con. Gas, Elec. Lt. & P. Com.....	100	116	117
Con. Gas, Elec. Lt. & P. Pfd.....	100	114	114½
Consolidation Coal.....	100	104½	105
G. B. S. Brewing Co.....	100	3½	5
Mer. & Miners' Trans. Co., V. T. 100		75	

<b>Railroad Bonds.</b>			
Atlantic Coast 1st 4s.....	95	95½	
Atlantic Coast Conv. Deben. 4s.....	103½	104	
Atlantic Coast (Conn.) 5s, Cts.....	92	92½	
Atlantic Coast (Conn.) 5s, Cts.....	103	105½	
Atlantic Coast Line 4s, Cts.....	85	85	
Balto. & Annap. S. L. 5s.....	77½		
Balto. & Cum. Val. 6s.....	110		
Balto. & Cum. Valley Ext. 6s.....	110		
Balto. & Harrisburg 5s.....	107		
Balto. & Harrisburg Ext. 5s.....	104		
Carolina Central 4s.....	93½		
Charleston & West. Car. 5s.....	107½		
Coal & Coke Railway 5s.....	84	96	
Coal & Iron Railway 5s.....	101½	101¾	
Col. & Green. 1st 6s.....	105	108	
Georgia & Alabama 5s.....	106½	107	
Georgia, Car. & North. 1st 5s.....	105½	106½	
Georgia South. & Fla. 1st 5s.....	106½	107	
Macon, Dublin & Savannah 5s.....	101½		
Maryland & Pennsylvania 4s.....	87½		
New Orleans Great North. 5s.....	107½	108½	
Potomac Valley 1st 5s.....	107½	108½	
Seaboard 4s, Stamped.....	87½	87¾	
Seaboard Refunding 4s.....	82½		
Seaboard & Roanoke 5s.....	107½		
Western N. C. Con. 6s.....	103	104	
Wilmington & Weldon 5s.....	110		
Wash., Balto. & Annap. 5s.....	85	87	

<b>Street Railway Bonds.</b>			
Anacostia & Potomac 5s.....	101		
Balto. Sp. Pt. & C. 4½s.....	96½	97½	
Baltimore Traction 1st 5s.....	103	105½	
Charleston City Railway 5s.....	95½	96½	
Charleston Con. Electric 5s.....	80		
Citizens' R. L. & P. of N. S. 5s.....	105	105¾	
City & Suburban 5s (Balto.).....	100¾	101	
Fairmont & Clarksburg Trac. 5s.....	106		
Knoxville Traction 5s.....	95½		
Lexington Railway 1st 5s.....	100	101½	
Macon Railway & Light 5s.....	99½	99½	
Maryland Electric Railways 5s.....	89	89½	
Newport News & Old Point 5s.....	89	89½	
Norfolk & Portsmouth Trac. 5s.....	100	100½	
Norfolk Railway & Light 5s.....	93		
Norfolk & Atlantic Terminal 5s.....	85	85½	
United Railways 1st 4s.....	65½	66	
United Railways Income 4s.....	87½	87¾	
United Railways Funding 5s.....	100½	100¾	
United Railways Notes.....	95½		
Virginia Railway & Power 5s.....	83	87	

<b>Miscellaneous Bonds.</b>			
Ala. Con. Coal & Iron 5s.....	99	99½	
Baltimore Electric 5s, Stp.....	109	110	
Consolidated Gas 4½s.....	97½	98½	
Con. Gas, Elec. Lt. & P. 4½s.....	90	90½	
Consolidation Coal Refd. 4½s.....	93	94	
Consolidation Coal Refd. 4½s.....	103	103½	
Fairmont Coal 1st 5s.....	96½	96½	
G. B. S. Brewing 1st 4s.....	50½	50½	
G. B. S. Brewing, Inc. 5s.....	12	13	
Mt. Vernon-Woodbury Cotton Duck 5s.....	75½	76	
United Electric Lt. & P. 4½s.....	94½	94½	

#### SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William B. Glenn, Broker, Spartanburg, S. C., for Week Ending April 15.

Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	75
Aiken Mfg. Co. (S. C.).....	55
American Spinning Co. (S. C.).....	163
Anderson Cotton Mills (S. C.).....	48
Anderson Cot. Mills (S. C.) Pfd.....	100
Arcadia Mills (S. C.).....	90
Arkwright Cotton Mills (S. C.).....	99
Belton Mills (S. C.).....	100
Brandon Mills (S. C.).....	90
Bronx Mills (S. C.).....	60
Chiquola Mfg. Co. (S. C.).....	180
Clifton Mfg. Co. (S. C.) Pfd.....	97
Clinton Cotton Mills (S. C.).....	120
Courtney Mfg. Co. (S. C.).....	93
Dallas Mfg. Co. (Ala.).....	99
Darlington Mfg. Co. (S. C.).....	45
D. E. Converse Co. (S. C.).....	76
Drayton Mills (S. C.).....	104
Eagle & Phoenix Mills (Ga.).....	100
Enslie Cotton Mills (S. C.).....	162
Enoree Mfg. Co. (S. C.).....	25
Enoree Mfg. Co. (S. C.) Pfd.....	85
Gaffney Mfg. Co. (S. C.).....	55
Gainesville Cotton Mills (Ga.).....	72
Glenwood Cotton Mills (S. C.).....	130
Graniteville Mfg. Co. (S. C.).....	125
Greenwood Cotton Mills (S. C.).....	57
Grendel Mills (S. C.).....	90
Hartsville Cotton Mill (S. C.).....	100
Henrietta Mills (N. C.).....	100
Inman Mills (S. C.).....	100
King Mfg. Co. (S. C.).....	80
Lancaster Cotton Mills (S. C.).....	130
Lancaster Cot. Mills (S. C.) Pfd.....	97
Langley Mfg. Co. (S. C.).....	75
Laurens Mills (S. C.).....	100
Limestone Mills (S. C.).....	155
Lockhart Mills (S. C.).....	60
Lockhart Mills (S. C.) Pfd.....	90
Loray Cotton Mills (N. C.) Pfd.....	95
Marlboro Cotton Mills (S. C.).....	75
Mills Mfg. Co. (S. C.).....	90
Molloy Mfg. Co. (S. C.).....	96
Monaghan Mills (S. C.).....	106
Monarch Cotton Mills (S. C.).....	110
Newberry Cotton Mills (S. C.).....	125
Ninety-Six Cotton Mill (S. C.).....	120
Norris Cotton Mills (S. C.).....	115
Orr Cotton Mills (S. C.).....	90
Pacolet Mfg. Co. (S. C.).....	90
Pacolet Mfg. Co. (S. C.) Pfd.....	95
Parker Common.....	20
Parker Preferred.....	45
Pelzer Mfg. Co. (S. C.).....	120
Poe Mfg. Co., F. W. (S. C.).....	110
Saxon Mills (S. C.).....	120

Spartan Mills (S. C.).....	110	120
Trian Mfg. Co. (Ga.).....	130	
Tucapau Mills (S. C.).....	300	350
Union-Buffalo (S. C.) 1st Pfd.....	60	
Union-Buffalo (S. C.) 3d Pfd.....	15	
Victor Mfg. Co. (S. C.).....	110	115
Warren Mfg. Co. (S. C.).....	80	90
Warren Mfg. Co. (S. C.) Pfd.....	100	106
Washington Mills (Va.).....	25	
Washington Mills (Va.) Pfd.....	106	
Whitney Mfg. Co. (S. C.).....	110	
Wicassett Mills (N. C.).....	125	
Woodruff Cotton Mills (S. C.).....	95	100
Woodale Cotton Mills (S. C.).....	100	
Watts Mills (S. C.).....	70	
Williamston Mills (S. C.).....	115	125

#### Florida Bankers' Convention.

At the annual meeting of the Florida Bankers' Association, held at Key West April 4 and 5, the following officers were elected for the ensuing year: President, Geo. W. Allen of Key West; first vice-president, J. J. Heard of Jacksonville; second vice-president, W. S. McClellan, Eustis; third vice-president, S. C. Harrison, Jr., Jacksonville; fourth vice-president, L. A. Fraleigh, Madison; secretary-treasurer, G. R. De Saussure of Jacksonville; executive committee, chairman, A. F. Perry of Jacksonville and Carl Warfield of Pensacola; H. G. Aird of Jacksonville, Z. C. Chambliss of Ocala, Thomas P. Denham of Jacksonville; vice-president for Florida of American Bankers' Association, Bainbridge Richardson of Jacksonville; delegates to the American Bankers' Association, A. F. Perry of Jacksonville, to represent the banks; H. G. Aird of Jacksonville, to represent the Trust Section, and J. B. Puller of St. Augustine, to represent the Savings Bank Section.

#### FINANCIAL CORPORATIONS.

Ala., Georgiana.—Official: The Farmers and Merchants' Bank chartered; capital \$25,000. T. L. Rose is president; D. H. Rhodes, vice-president; directors, N. T. Rhodes, O. H. Warren, Wilton Johnson and T. R. Hicks. Business is to begin as soon as charter is granted.

Ala., Notasulga.—A new bank is reported being organized with \$25,000 capital.

Ala., Wilsonville.—A new bank is reported being organized. H. L. Wynn, cashier of the Talladega National Bank, is said to be interested.

Ark., Blue Mountain.—The Blue Mountain Bank is reported to have filed articles of incorporation; capital \$10,000. S. A. Ribelin is president, G. A. Morris vice-president, C. B. Ribelin secretary, and C. N. Gilliam treasurer.

Ark., Fordyce.—The Bankers' Mortgage & Trust Co. is reported to have filed articles of incorporation; capital \$100,000. C. S. McCain is president; Dr. H. H. Longino of Magnolia, vice-president; J. R. Hampton, treasurer; J. H. Meek, secretary and general manager. The other stockholders are H. C. Couch, V. M. Davis and A. B. Banks.

D. C., Washington.—The Columbia Trust Co., capital \$1,000,000, which will probably be increased to \$2,000,000, is reported being organized by Brainard H. Warner and others. George W. White, president of the National Metropolitan Bank, is temporary secretary.

Fla., Jacksonville.—The Germania Bank, capital \$50,000, is reported to have filed articles of incorporation; incorporators, Bainbridge Richardson, F. W. Weinberg, J. H. Patterson, J. Denham Bird and W. F. Seaba. Offices will be at the southwest corner of Union and Davis streets. Business is expected to begin in the next few weeks with directors thus: Bainbridge Richardson, president; F. W. Weinberg, first vice-president; J. H. Patterson, second vice-president, and J. Denham Bird, cashier.

Ga., Jackson.—The First Farmers' Bank, capital \$50,000, is reported organized with directors thus: L. O. Benton of Monticello, president; Dr. J. A. Jarrell and G. P. Saunders, vice-presidents, and J. B. Carmichael, cashier; J. A. King, J. M. Ball, R. E. Evans, S. M. Maddox, S. O. Ham, J. C. Jones, C. B. Biles and T. P. Bell.

Ga., Union City.—The Citizens' Bank is reported chartered; capital \$25,000; incorporators, W. E. Moreland, J. T. Braswell, F. J. Dodd and J. H. Estes.

La., Merryville.—Official: The National Mercantile Co. incorporated; capital \$10,000; J. P. McKean, president; A. B. Finke, vice-president; James Robb, secretary and treasurer. Business is to begin May 17.

La., De Ridder.—The De Ridder Building and Loan Association, capital \$1,000,000, is reported chartered. Officers not yet elected.



**Md., Baltimore.**—Official: Southern Securities Corporation, Equitable Building, incorporated; capital \$10,000; president, Edward R. Cooper, 244 N. Calvert St., Baltimore; secretary-treasurer, Harry E. Garner, 125 W. Lafayette Ave.; general counsel, Robert Whitney Imbrie, the Arundel. The corporation, which is now ready for business, is organized especially for the advancing of Southern enterprises, including the amalgamation of life insurance companies.

**Miss., Greenwood.**—A new bank, capitalized at \$50,000, is reported being organized. Incorporators: H. G. Kitchell and J. H. Ellington of Greenwood; W. H. Dick of Philipp, Miss.; J. J. Green of Greenwood; Vassa W. Dacus of Whaley; William C. Lee of Greenwood; Douglass Robinson of Sidon, Miss.; J. H. Bernard of Senatobia, Miss.; S. M. Willisford and W. M. Hamner of Greenwood. It is said that W. M. Hamner will be president and J. H. Ellington, cashier. Offices will be on Carrollton Ave.

**Mo., Allendale.**—The Farmers' Bank of Allendale, capital \$10,000, is reported incorporated by J. L. Tilton, Ed. Tilton, C. A. Hammen and G. E. Hammen.

**N. C., Gastonia.**—Official: The Home Building and Loan Association, 221 W. Main Ave., chartered; president, C. B. Armstrong; first vice-president, R. G. Rankin; second vice-president, Marshall Dilling; secretary and treasurer, E. B. Brittain; business began April 1. Capital to be paid in installments of 25 cents per week; about 750 shares subscribed for first series.

**N. C., Raleigh.**—Official: A new building and loan association is chartered with authorized capital of \$5,000,000; incorporators, J. W. Hinsdale, Jr., Geo. P. Fock, E. C. Duncan and W. B. Drake, Jr. Business is expected to begin about July 1.

**N. C., Raleigh.**—Official: A building and loan association is being organized, of which E. C. Duncan will be president. It is expected that Geo. P. Fock will be vice-president, and R. T. Gowan, secretary and treasurer. It is hoped to begin business about July 1.

**Okla., Alex.**—Reported chartered: Bank of Alex, capital \$25,000; incorporators, R. K. Wooten, Chickasha; C. E. Costello, Lindsay; Lee Cruse, Jesse Moore, J. A. Corzine, Bond Bros. and others of Alex. Business is to begin immediately.

**Okla., Roff.**—Official: The Farmers & Merchants' National Bank is a conversion of the Farmers' Bank; capital \$25,000; surplus \$12,500. Randolph Lawrence is president; F. H. Wickett, vice-president; F. E. Gilmore, cashier, and George P. Kuykendall, assistant cashier.

**S. C., Cades.**—The Bank of Cades is reported to have been granted a commission; capital \$10,000; petitioners, W. B. Wilson, V. G. Arnette and F. L. Wilcox.

**S. C., Columbia.**—The People's Bank, capital \$50,000, is reported to have elected directors to be: Jas. A. Hoyt, president; L. C. Lipscomb and A. B. Langley, vice-presidents; W. W. Watson, cashier; Wm. Platt, W. J. Conway, Arthur H. Kohn, Joseph D. Mlot and D. G. McAllister.

**S. C., Sandy Springs.**—The Bank of Sandy Springs is reported to have been granted a commission; capital \$20,000; petitioners, B. F. Mauldin, J. D. McElroy, J. B. Douthit and S. W. Johnson.

**S. C., Westminster.**—Official: The Westminster Loan & Trust Co. will organize the first of May. B. M. England is interested.

**Tenn., Jackson.**—The Security Bank & Trust Co., capital \$50,000, is reported organized by A. M. Alexander, W. G. Morgan, B. H. Blalock, J. A. Crook, Thos. McCorry and R. R. Sneed. B. H. Blalock will be cashier.

**Tenn., Knoxville.**—The American Bank & Trust Co., capital \$50,000 and surplus \$5,000, which expects to begin business about May 1, has elected officers thus: President, W. H. Sterchi; first vice-president, R. G. Wright; second vice-president, John C. Carter; cashier, R. W. Peery.

**Tenn., Memphis.**—The Farmers' Trust & Banking Co. is reported to have filed application for a charter; capital \$25,000; incorporators, John R. Young, W. E. Moore, E. M. Davies, John R. Choate and J. J. Williams, Jr.

**Tenn., Mercy.**—The Union Bank of Mercy is reported chartered; incorporators, John Hicks, A. D. Wright, Eva Russell, R. J. Carroll and William True.

**Tex., Austin.**—Official: The Texas Trust Co. of Austin chartered; capital \$300,000; surplus \$25,000. Directors: Sam Sparks, president; George W. Walling, Jr., vice-president; H. A. Turner, secretary and treasurer; E. P. Wilnot, Chester Thrasher, Walter Bremond, H. A. Wroe, C. A. Nelson,

A. W. Pfluger, C. P. Ledbetter, H. E. Ford, N. A. Stedman, T. B. Walling, L. B. Mewhinney and J. Z. Miller, Jr. Business began April 4.

**Tex., Bloomington.**—The Bank of Bloomington is organized with J. R. McGuffin of Sinton, Tex., as cashier. Business has begun.

**Tex., Cleburne.**—The State Security Co., capital \$10,000, is reported incorporated by J. B. Landers, J. C. Smythe, R. E. Pitts and others.

**Tex., Cleburne.**—The State Security Co., capital \$10,000, is reported chartered; incorporators, J. B. Landers, J. C. Smythe, R. E. Pitts and others.

**Tex., Chrisman.**—A letter to the Manufacturers Record says that a new bank is to be organized at Chrisman next fall.

**Tex., Dallas.**—Official: The Republic Surety, Fidelity & Trust Co. has been re-incorporated under the name of the Republic Trust Co., with offices at 810 Wilson Building. The authorized capital is \$5,000,000. C. L. Wakefield is president; A. Silvers, vice-president; George H. Bird, secretary; George A. Carden, general counsel, and J. L. White, treasurer; directors, C. L. Wakefield, A. Silvers and George H. Bird of Dallas, J. L. White of McKinney, J. T. Garlington, Sweetwater; B. H. Davenport, Denton; J. D. Whitcomb, Groesbeck; J. B. Hunt, Bowie; T. C. Morgan, Longview; T. C. Jasper, Plano, and Fred E. Johnston of Dallas. Business is expected to begin in about 10 days.

**Tex., Houston.**—The Liberty Abstract & Title Co., capital \$10,000, is reported incorporated by Minor Stewart, W. M. Caldwell and John H. Freeman.

**Tex., Ireland.**—The First State Bank of Ireland is reported chartered; capital \$20,000. Incorporators, D. W. Edwards, W. P. Grubb, Sr., and C. L. Johnson.

**Tex., Kenny.**—A new bank capitalized at \$10,000 is reported being organized by I. Artmann and W. A. Matthei of Bellville, Tex.; J. D. Kamas, John Stokes, Monroe Stokes, Hugo Luhn, Charles Ebert, Philip Freitag, W. L. Blum, Paul Luhn, J. J. Doleshal, Mrs. Emma Stokes and Mrs. J. Jaechle of Kenny. J. D. Kamas will be president.

**Tex., Leonard.**—Official: First State Bank of Leonard chartered; capital \$50,000. Business is to begin about July 1. O. S. Ferguson is among those interested.

**Tex., Lacoste.**—The Lacoste National Bank, capital \$25,000, is reported being organized by Frank Keller, E. Schmidt, W. H. Hawkes, H. Gross and E. Keller.

**Tex., Neches.**—Reported chartered: Guaranty State Bank of Neches; capital \$10,000; incorporators, T. M. Campbell, John R. Moore and E. C. Todd; directors, John R. Moore, president; J. B. McDonald, vice-president; E. J. Curtis, cashier; E. C. Todd, J. E. Angly and Frank Seale.

**Tex., Van Horn.**—The Culberson County Abstract & Guaranty Co., capital \$10,000, is reported incorporated by G. H. Cox, Joe Irby, J. E. Cox and Fred G. Irby.

**Tex., Waco.**—The Peerless Fire Insurance Co., capital \$500,000 and surplus \$100,000, is reported organized with: President, C. C. Beckley; vice-president and chairman of the executive and finance committee, Charles L. Sanger; secretary and treasurer, J. W. Saunders, formerly of Gatesville; chairman of auditing committee, C. H. Cox; general attorney, Judge J. N. Gallagher, all of Waco; directors, J. J. Durham, R. G. Wright, S. F. Kirksey, Jr., Pat F. Hopkins, Waco; Dr. J. R. Maxfield, Grand Saline; J. D. Whitcomb, Groesbeck; S. T. Christian, West and Elm Mott.

**Va., Richmond.**—Official: The City Investing Corporation, capital \$35,000 to \$350,000, is incorporated by E. B. Thomson, 507 Mutual Bldg., president; John B. Minor, vice-president; William P. Redd, secretary and treasurer. The company has not yet decided when business will begin.

**W. Va., Fairview.**—The First National Bank of Fairview is reported being organized; capital \$30,000; directors, J. Y. Hamilton, W. D. Yost, J. L. Tennant and B. S. Deering.

**W. Va., Morgantown.**—The Farmers and Laborers' Building and Loan Association, capital \$300,000, is reported incorporated by Robert D. Barrickman, Florence E. Davis and Joseph J. Elbert of Morgantown; Cole F. Brewer and Benjamin F. Jacobs of Star City, W. Va.; Elza S. Moore and James D. Guthrie of Little Falls, W. Va., and others of Monongalia county.

#### NEW SECURITIES.

**Ala., Eutaw.**—Official: Greene county has voted \$25,000 for road bonds.

**Ala., Florence.**—May 5, it is reported, an

election is to be held in Lauderdale county to vote on \$150,000 of 5 per cent. 20-year road bonds.

**Ala., Florence.**—City is reported to have issued \$15,000 of bonds for State Normal School.

**Ala., Greensboro.**—E. H. Rollins & Sons, Chicago, are reported to have been awarded at \$5000 premium \$100,000 of 5½ per cent. 30-year Hale county road-improvement bonds.

**Ala., Wetumpka.**—Official: Bids will be received until May 8 for \$50,000 of 5 per cent. 30-year Elmore county road bonds. M. D. Still is Judge of Probate.

**Ark., Pocahontas.**—Official: Bids will be opened on May 11 for \$85,000 of the \$100,000 of 20-40-year bonds of Running Lake drainage district; denomination \$500; dated July 1, 1912. Address W. H. Skinner, B. F. Bigger, F. Spinnenweber of Pocahontas, directors. J. J. Lewis is secretary.

**Ga., Cedartown.**—Reported voted: \$30,000 of paving bonds.

**Ga., Columbus.**—Official: Voted March 16: \$50,000 of 5 per cent. bonds to complete bridge across Chattahoochee River; denomination \$500. Bonds were voted March 16, 1912; dated July 1, 1912; maturity \$5000 July 1, 1913, and \$5000 annually thereafter; date of opening bids not yet determined. L. H. Chappel is Mayor.

**Ga., Glenville.**—Official: Coffin & Crawford, Chicago, purchased on March 6 at \$15,000, with accrued interest less \$300, the \$15,000 of 5 per cent. 10-30-year school-building bonds voted December 15, 1911; dated February 1, 1912; maturity 1922, 1932 and 1942. R. B. Anderson is City Clerk.

**Ga., Macon.**—W. G. Solomon & Co. of Macon are reported to have been awarded at par, accrued interest and \$1542.50 premium the \$50,000 of 4½ per cent. water-works bonds.

**Ga., Monticello.**—May 6, it is reported, an election is to be held to vote on \$8000 of water system and \$7000 of electric-light equipment bonds.

**Ga., Newnan.**—R. D. Cole of Newnan, Ga., is reported to have been awarded at \$401 premium the \$8000 of 6 per cent. school bonds.

**Ky., Lexington.**—Official: Defeated: Sewer bonds. James J. O'Brien is City Clerk.

**La., Coushatta.**—April 16, it is reported, an election was held in Red River parish to vote on \$75,000 of 5 per cent. 10-year courthouse and jail bonds.

**La., Covington.**—Reported voted: \$60,000 of water-works bonds.

**La., Natchitoches.**—Reported that the Interstate Trust & Banking Co. of New Orleans has purchased, at par and accrued interest, the \$50,000 of 5 per cent. school district building bonds.

**La., Opelousas.**—Official: The Interstate Trust & Banking Co., New Orleans, was awarded on March 30, at par and accrued interest, less \$500 to cover cost of printing of bonds, legal opinion, etc., the \$40,000 of 5 per cent. 1-30-year sewerage system bonds of First Sewerage District; denomination \$500; dated October 1, 1911. Bonds were voted August 24, 1911. W. J. Sandoz is secretary.

**La., Shreveport.**—The Louisiana Life Insurance Co. is reported to have purchased at \$251.75 premium the \$50,000 of fire department bonds.

**Miss., Ackerman.**—Reported that \$15,000 of school and water-works bonds are to be issued.

**Miss., Bay St. Louis.**—A. A. Kergosien, clerk Board of Supervisors of Hancock county, will, it is reported, receive bids until noon May 6 for \$25,000 of 6 per cent. road and bridge bonds.

**Miss., Canton.**—Press dispatches state that in May \$50,000 of 5 per cent. District No. 1, Madison county, road-improvement bonds are to be sold by the Board of Supervisors.

**Miss., Ellisville.**—Notice is given that Jones county proposes to issue \$10,000 of bonds for additional building to agricultural high school; interest not to exceed 5 per cent. W. H. Bufkin is clerk.

**Miss., Jackson.**—Official: Bids will be opened at noon May 6 for \$50,000 of 5 per cent. 20-year Coahoma county road and bridge bonds; denomination \$500; dated June 1, 1912; maturity June 1, 1942. Address T. S. Aderholdt, president Board of Supervisors, Friars Point, Miss.

**Miss., Leakesville.**—Reported that John D. Turner, County Treasurer, will receive bids until May 25 for \$25,000 of 5 per cent. 10-year Greene county road bonds; dated June 1, 1912; maturity June 1, 1922.

**Miss., Oxford.**—May 4, it is reported, an election is to be held to vote on road bonds for Beat 1.

**Miss., Kosciusko.**—Official: Bids will be re-

ceived until noon May 7 for \$30,000 of 5 per cent. 20-year sidewalk and street improvement bonds. Address W. M. Noah, Mayor.

**Miss., Oxford.**—Official: May 4 an election is to be held to vote on \$100,000 of bonds for construction of roads in district No. 1, Lafayette county. William Woodward is Clerk.

**Miss., Richton.**—Reported that the election to vote on \$7000 of school bonds has been postponed from April 16 to April 23.

**Miss., Sumner.**—Official: May 6 an election is to be held to vote on \$22,500 of water-works, electric plant and sewerage bonds. A. L. Whitten is Mayor and Thos. I. Rice, Clerk.

**Miss., Vicksburg.**—The Home Savings Bank of Vicksburg is reported to have been awarded at 103.125 the \$300 of 5 per cent. 5-20-year Warren county bridge-construction bonds.

**Miss., Waynesboro.**—Official: Bids will be opened May 7 for \$15,000 of 5 per cent. 20-year bonds of Waynesboro Separate School District, voted March 7, 1912; dated June 1, 1912; maturity June 1, 1932; denomination \$500. W. E. Latham is Clerk.

**Mo., Columbia.**—Reported that Harg Road District, Boone county, has been authorized to issue \$20,000 of bonds.

**Mo., Easton.**—Official: The \$34,000 of 4 per cent. street-improvement bonds were awarded to Townsend, Scott & Co. of Baltimore.

**Mo., Pleasant Hill.**—Reported voted: \$27,500 water-works bonds.

**Mo., Sugar Creek.**—Reported voted: \$12,000 of school district building bonds.

**Mo., Springfield.**—Bids will be received until 9 A. M. May 7 by J. H. Langston, City Clerk, for \$50,000 of fire department, \$50,000 of street improvement and \$70,000 of sewer system 5 per cent. 5-20-year bonds; denomination \$1000; dated June 1, 1912. Robert E. Lee is Mayor.

**Mo., Webb City.**—Reported defeated: \$10,000 of school district improvement bonds.

**Mo., Wellspring.**—Official: Defeated: Water-works bonds. S. S. Cox is Mayor.

**Mo., Whiteside.**—Reported voted: School bonds.

**N. C., Ashboro.**—Ashboro, Randleman and Brewer townships, Randolph county, are reported to have voted \$80,000 of bonds in aid of the Randolph & Cumberland Railway. An official letter says bonds will be delivered to railroad when road is built.

**N. C., Charlotte.**—The Carolina Insurance & Securities Co. of Charlotte, N. C., writes the Manufacturers Record that they were awarded the entire issue of \$250,000 of 4½ per cent. street and sewer bonds. Baker, Watts & Co. and Nelson Cook & Co. of Baltimore inform us that the bonds were purchased by the Charlotte company for them, and that they are now offering the securities.

**N. C., Edenton.**—City is reported to have sold water-works bonds.

**N. C., Goldsboro.**—Official: Bids will be received until noon May 4 for \$30,000 of 6 per cent. drainage district bonds. Address John R. Wooten, chairman Board of Commissioners of Wayne County Drainage District No. 1.

**N. C., Greensboro.**—Reported that in addition to the \$100,000 of street and water bonds already planned, the city contemplates issuing \$25,000 of market place and opera-house bonds.

**N. C., Hickory.**—Reported that an election is to be held to vote on \$50,000 of Hickory township road bonds.

**N. C., Kenansville.**—Official: Bids will be received until noon April 29 by the Board of Commissioners of Muddy Creek Drainage District, at Kenansville, for \$27,000 of 6 per cent. bonds. G. B. D. Parker is chairman Board of Commissioners, Muddy Creek Drainage District, Chiquapin, N. C.

**N. C., Kernersville.**—Official: Voted: \$500 of 30-year electric-light bonds. Date for opening bids not yet decided. W. C. Stafford is Mayor. Officials in charge, M. Vance Fulp, W. S. Linville, C. L. Linville, W. F. Winfree and Lucian Hepler.

**N. C., Roxboro.**—The Terrell School Fund is reported to have purchased \$20,000 of street-improvement bonds.

**N. C., Troy.**—Official: A. J. Hood & Co., bankers, Detroit, Mich., purchased on April 15, on a 5 per cent. basis, the \$20,000 of 6 per cent. Troy graded school district bonds.

**N. C., Whitakers.**—The Planters' Bank, Rocky Mount, is reported to have been awarded \$10,000 of 6 per cent. 20-year electric-light bonds.

**N. C., Winston.**—Press dispatches state

[For Additional Financial News, See Pages 80 and 81.]

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 HARRY W. DAVIS, Secretary.  
 W.W. PUSEY, 2d Title and Real Estate Officer.

H. B. Wilcox, President. Blanchard Randall, V.-Pres.  
 Wm. S. Hammond, Cashier.  
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CAPITAL AND SURPLUS - \$3,500,000

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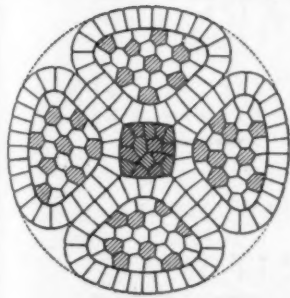
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DEPOSITS DEC. 31, 1909.....\$ 8,041,252.59  
 DEPOSITS DEC. 31, 1910..... 8,809,643.00  
 DEPOSITS DEC. 31, 1911..... 10,344,570.57

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OF BALTIMORE

CAPITAL - \$1,500,000.00

SURPLUS - \$3,000,000.00



that the \$350,000 of improvement bonds recently voted have been declared illegal by the Supreme Court and that another election will be held.

Okla., Alva.—R. J. Edwards & Co., Oklahoma City, are reported to have purchased \$55,000 of water extension bonds at 101.18. J. Lloyd Stewart is City Clerk.

Okla., Enid.—Reported that city has for sale \$15,000 of 5 per cent. 20-25-year bonds; denomination \$1000; dated June 1, 1911.

Okla., Guthrie.—Reported that \$37,000 of 5½ per cent. 25-year Logan county funding bonds will soon be offered; denomination \$1000; dated March 23, 1912.

Okla., Guthrie.—City proposes, it is reported, to issue \$15,000 of funding bonds.

Okla., Hennessey.—Bids were received until noon April 18 for \$10,000 of city hall and \$10,000 of water-works 6 per cent. bonds. Address C. A. Nothstein, Town Clerk.

Okla., Waggoner.—Official: G. W. and I. E. Piersoll and R. J. Edwards purchased at par \$40,000 of water and light, \$29,000 of refunding and \$20,000 of road 5 per cent. 25-year bonds; denomination \$1000. John B. Cook is Mayor.

S. C., Columbia.—The City Council has passed a resolution, according to press dispatches, that the Mayor and City Council be authorized to borrow \$90,000 at 4 per cent. on notes payable on or before January 1, 1913.

S. C., Columbia.—Official: Bids are invited for \$25,000 of 6 per cent. first mortgage bonds of the State Agricultural and Mechanical Society of South Carolina by D. G. Ellison, treasurer, 1207 Hampton St. Bonds are of \$500 denomination and mature August 25, 1931.

S. C., Columbia.—Bids will be received until 10 A. M. April 26 for \$30,000 of 5 per cent. 20-year bonds of school district No. 13, Richland county; denomination \$500; dated January 1, 1912. Address B. B. Kirkland, chairman of the board.

S. C., Greenville.—Notice is given that an election is to be held May 7 to vote on \$115,000 of street-improvement and \$35,000 of sewer-extension 20-year bonds; interest not to exceed 5 per cent. W. C. Beacham is Mayor and G. Frank League City Clerk and Treasurer.

S. C., Rock Hill.—Reported that an election is to be held to vote on \$50,000 of water bonds.

S. C., Batesburg.—The \$15,000 of bonds of school district No. 18, voted in 1910, are reported sold.

Tenn., Hohenwald.—Reported that bids will be received until 1 P. M. June 1 for \$10,000 of 5 per cent. 10-year Lewis county school bonds; denomination \$500; dated June 1, 1912; maturity June 1, 1922. Address W. T. Tatum, County Judge.

Tenn., Memphis.—Official: Bids will be received until 2:30 P. M. April 23 by Ennis M. Douglass, City Clerk, for \$220,000 of 6 per cent. 15-year street-improvement bonds; dated March 1, 1912; also for \$450,000 of 4½ per cent. general liability improvement bonds; dated March 1, 1912, and maturing March 1, 1947.

Tenn., Springfield.—Reported that bids will be received at once for \$300,000 of 4½ per cent. 20-30-year Robertson county road bonds; denomination \$1000. Address Lee T. Dowell, County Clerk.

Tenn., Springfield.—Official: \$300,000 of 4½ per cent. 20-year Robertson county pike bonds, voted March 16, are being offered; denomination \$1000. Lee T. Dowell is Clerk County Court.

Tenn., Trenton.—An official letter confirms report that Gibson county road bonds were defeated.

Tex., Abilene.—Official: May 6 an election will be held to vote on \$70,000 of bonds for crematory, and on May 7 on \$10,000 of bonds for purchase of auto fire apparatus. E. N. Kirby is Mayor.

Tex., Abilene.—Reported that an election

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is to be held to vote on \$10,000 of fire equipment and \$7000 of crematory bonds.

Tex., Austin.—The Attorney-General is reported to have approved the following securities: \$23,500 of 5 per cent 5-40-year Richmond independent school district bonds; \$40,000 of road bonds of District No. 7, Valley Mills and vicinity; \$40,000 of 5 per cent 10-40-year El Paso county courthouse addition bonds; \$12,000 and \$1900 of bridge 5 per cent 10-40-year Bell county bonds; \$50,000 of 5 per cent 10-40-year Tyler high school; \$8000 of 5 per cent 5-40-year bonds of Smith county common school district No. 18.

Tex., Bastrop.—May 14, it is reported, an election is to be held in Bastrop justice precinct, Bastrop, Hills Prairie and Goodman, Bastrop county, to vote on \$80,000 of road bonds.

Tex., Beaumont.—May 14, it is reported, an election is to be held to vote on \$100,000 of bonds of Hamshire Drainage District, Jefferson county.

Tex., Boston.—Bowie county is reported to have voted \$60,000 of Precinct No. 2 levee bonds.

Tex., Beaumont.—Press dispatches state that R. M. Grant & Co., New York, were joint bidders with Seasongood & Mayer of Cincinnati, who were awarded the \$150,000 of 5 per cent 20-40-year municipal bonds.

Tex., Brownsville.—Official: The \$106,400 of 5 per cent bonds of Drainage District No. 2 will soon be offered. Bonds were voted January 11, 1912. Address I. G. Keeler, secretary, R. F. D. No. 1, Brownsville.

Ga., Columbus.—Voted March 16: \$50,000 of 5 per cent bridge bonds. M. M. Moore is Clerk.

Tex., Commerce.—Reported voted: \$10,000 of general improvement bonds.

Tex., Corpus Christi.—Reported that the \$150,000 of 5 per cent 10-40-year paving bonds have been sold.

Tex., Denton.—Reported voted: \$9000 of 5 per cent 5-40-year school-improvement bonds; denomination \$1000.

Tex., El Paso.—El Paso county is reported to have voted \$7000 for construction of bridges at Montoya and Vinton and \$10,000 for protection of valley lands from high water of the Rio Grande.

Tex., Floresville.—May 14, it is reported, an election is to be held to vote on \$20,000 of brick school-building bonds.

Tex., Grand Saline.—Official: Defeated: \$50,000 of road district bonds.

Tex., Greenville.—May 25, it is reported, an election is to be held in Hunt county to vote on \$400,000 of 5 per cent 40-year bonds for Precinct No. 1.

Tex., Honey Grove.—Reported voted: \$19,000 of 5 per cent school-building bonds.

Tex., Howland.—Reported voted: \$10,000 of Howland School District, Lamar county, bonds.

Tex., Kerrville.—April 23, it is reported, an election is to be held to vote on \$20,000 of street-improvement bonds.

Tex., Kerrville.—Official: Charles Schremer has purchased at par and accrued interest the \$30,000 of 5 per cent 40-year school district high-school bonds voted May, 1911; dated July 1, 1911; maturity July 1, 1951; denomination \$500.

Tex., Lawrence.—Reported voted: \$17,500 of sewer bonds.

Tex., Marshall.—Reported that an election will soon be called to vote on bonds for abattoir and street paving.

Tex., Mertens.—Reported voted: \$12,500 of independent school district bonds.

Tex., Mineral Wells.—Reported defeated: Precinct No. 1, Palo Pinto county, road bonds.

Tex., Paducah.—City is reported to have sold \$27,000 of 5 per cent 10-40-year water-works bonds.

Tex., Rosedale.—Official: J. T. Slader & Co., San Antonio, Tex., has purchased at par \$25,000 of 5 per cent 40-year Helbig School District bonds; denomination \$1000; dated April 10, 1912; maturity April 10, 1952. Bonds were voted February 13, 1912.

Tex., Raymondville.—Official: Bids were received until 10 A. M. April 16 for \$100,000 of 5½ per cent 21-30-year irrigation district road bonds; denomination \$500. Bonds were voted December 30, 1911. A. T. Woodhouse is president Board of Union Irrigation District.

Tex., Reagan.—Reported voted: Reagan independent school district bonds.

Tex., San Benito.—Reported voted: \$48,000 of sewer and street-improvement bonds.

Tex., Sherman.—Reported that bids are

soon to be asked for \$400,000 of Grayson county road bonds.

Tex., Taylor.—Official: April 30 an election is to be held to vote on \$25,000 of 5 per cent 25-year paving bonds; denomination \$1000; dated May 1, 1912. Address C. M. Still, Mayor.

Tex., Temple.—The question of issuing \$35,000 of bonds for improvements to fire-fighting equipment is reported under consideration.

Tex., Terrell.—Official: A. B. Wood, Slaughter Bldg., Dallas, Tex., purchased at par, accrued interest, cost of printing bonds and premium of \$247.50 the \$45,000 of 5 per cent 40-year water-works and street-improvement bonds; denomination \$500; dated May 1, 1912. Address W. P. Allen, Terrell, Tex.

Tex., Troy.—Official: J. C. Fowler, president Board of Education, will, it is reported, receive bids until April 22 for \$30,000 of 5 per cent 10-40-year independent school district bonds.

Tex., Waco.—Official: Voted: \$400,000 of water-works extension and \$20,000 of street-improvement 5 per cent 30-year bonds; denomination \$1000; dated January 1, 1912; date of opening bids not yet decided.

Va., Bowling Green.—Press dispatches state that an election will probably be held the middle of June to vote on \$125,000 of Caroline county road-improvement bonds.

Va., Colonial Beach.—Official: S. A. Keen & Co., Chicago, Ill., were awarded at above par the \$37,000 of 6 per cent water and sewer bonds offered April 11, 1912. H. W. B. Williams is Mayor.

Va., Portsmouth.—Reported that \$121,000 of 5 per cent 20-year Norfolk county school bonds have been purchased by Wooden, McNair & Moroe, Chicago, at \$50 premium.

Va., Suffolk.—Reported that John B. Pinner, superintendent Department of Finance, will receive bids until 3 P. M. May 2 for \$40,000 of 5 per cent 30-year school, street, water and funding bonds.

W. Va., Adamston.—Reported defeated: \$70,000 of bonds of Coal school district.

W. Va., Benwood.—Reported that \$40,000 or \$50,000 of school-building bonds will probably be issued.

W. Va., Berwind.—A letter to the Manufacturers Record says that the special election March 9 to vote on district high school building bonds failed to carry. Wm. Cody Fletcher is District Supervisor. Another election will probably be held.

W. Va., Clarksburg.—Official: Bids will be received until 2 P. M. May 6 for \$25,000 of 5 per cent Clarksburg school district, Harrison county, bonds; dated September 1, 1911; maturity September 1, 1941; optional after September 1, 1921. Address James N. Hess, secretary Board of Education.

W. Va., Grafton.—An ordinance has been prepared providing for the issuing of \$30,000 of 5 per cent 10-34-year water-works improvement bonds; Charles Stolzenfels is Mayor.

W. Va., Huntington.—Press dispatches state that \$100,000 of Cabell county road bonds have been sold to Seasongood & Mayer of Cincinnati.

W. Va., Lumberport.—Reported voted: \$15,000 of Lumberport school district high school building bonds.

W. Va., Parkersburg.—Press dispatches state that bids will be opened at 3 P. M. May 9 for the \$100,000 of 4 per cent 20-year water-works improvement bonds recently noted; denominations, \$100, \$500 and \$1000;

dated June 1, 1912. W. H. Smith, John S. McKown, Edward Nelly and Charles A. Bukey, City Commissioners.

W. Va., White Sulphur Springs.—Reported that bids will be received until 4 P. M. May 4 by S. H. Turner, secretary Board of Education, for \$20,000 of 6 per cent bonds of White Sulphur Springs school district; dated May 15, 1912; maturity May 15, 1932; optional after May 15, 1923.

At Columbia, S. C., bids are invited for \$25,000 of 6 per cent first mortgage bonds of the State Agricultural and Mechanical Society of South Carolina. Further particulars will be found in the advertising columns.

At Goldsboro, N. C., bids will be received until noon May 4 for \$30,000 of 6 per cent bonds of Wayne County Drainage District No. 1. Further particulars will be found in the advertising columns.

At Kosciusko, Miss., bids will be received until noon May 7 for \$30,000 of 5 per cent 20-year sidewalk and street-improvement bonds. Further particulars will be found in the advertising columns.

#### FINANCIAL NOTES.

The Virginia Farm Development Corporation of Norfolk, Va., is offering \$100,000 of 7 per cent cumulative preferred stock, which is practically first mortgage bonds.

S. L. Nusbaum & Co. of Norfolk inform the Manufacturers Record that they have purchased for their clients, through their attorney, Tazewell Taylor, the stock of the Citizens' Security Co., Inc., of Suffolk, authorized capital \$300,000, and established the main office in Norfolk, Va.

## The Absurdity of the Open Elevator Well

**A**N elevator, dumbwaiter or other kind of shaft creates, in case of fire, the most powerful and destructive draft imaginable. Fires naturally follow the direction of air currents. The more powerful the draft, the more surely and more quickly are the flames swept along by these air currents—growing in their ferocity and velocity.

Every one is familiar with the great rush of air up elevator wells—increasing proportionately to the height or depth of the shaft. Literally, these shafts are chimneys—with an opening on each floor.

Flames are irresistibly drawn to the elevator well. They sweep to this igniting all in their path, bursting forth at every opening. The rapid spreading of the fire is inevitable.

The absurdity of open elevator wells has been clearly demonstrated thousands of times. Even now, in many of our supposedly perfect buildings, this simple but no less positive rule has been ignored.

Every elevator shaft should be securely closed. It should not be possible for a fire to spread by the elevator shaft route. There is no excuse for any opening in the elevator shaft doors. If there is an opening, it should be closed with heavy wire glass. To wilfully violate "what experience has taught" is openly inviting danger.

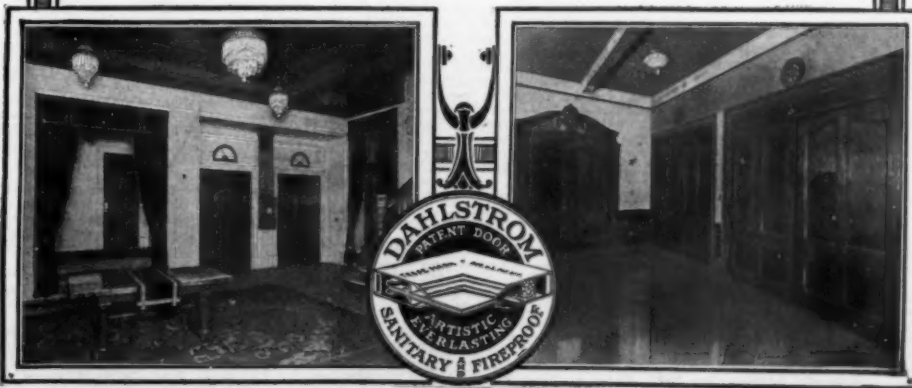
If nothing else in the building, present or future, is fireproof, the elevator well should be totally "boxed in" with The Dahlstrom Products. Better still, The Dahlstrom Products should replace all the obsolete inflammable trim of a building which permits a fire to eat its way from room to room or floor to floor.

Complete literature may be had upon request from our nearest branch office or direct.

### Dahlstrom Metallic Door Company

Executive Offices and Factories, 73 Blackstone St., Jamestown, N. Y.

Branch Offices in all Principal Cities





# Classified Opportunities

## MEN WANTED

**HIGH-GRADE SALESMEN** having acquaintance among large manufacturers will bear of side line paying liberal commission; no samples required. Address "Allen," Box 663, Cincinnati, Ohio.

**WE WANT** immediately two high-class salesmen to sell Tots in a subdivision near Atlanta; a meritorious proposition; 25% commission. Address The Atlanta Realty Owners, 1012 Empire Life Bldg., Atlanta, Ga.

**WANTED**—Traveling or local men; all sections of the country; profitable side line; commission or salary; good men average \$100 weekly. For particulars address The Sun Chemical Company, Richmond, Va.

**WANTED**—An energetic young man with a technical education or a graduate of a textile school, having some experience in a factory. We have an opening that will develop into a very good position to someone willing to learn our business. Columbian Rope Co., Auburn, N. Y.

**WANTED**—Office manager for wholesale hardwood and yellow-pine lumber, with headquarters in Philadelphia; prefer man who can invest some money in the business; good salary to right man. Address No. 975, care Manufacturers Record.

**WANTED**—Architectural draughtsman, capable of making complete working drawings for residences and small mercantile buildings from rough sketches. Answer, giving references, experience, salary expected and when available. Box 756, Wilmington, N. C.

**WANT SALES MANAGER** to take charge of wholesale department for a manufacturing firm located in Tennessee to handle hardwoods and yellow pine; party must have five to ten years' experience and be willing to put \$5000 to \$10,000 in the business; wanted at once. Write us and we will furnish you full details. Address No. 973, care Manufacturers Record.

**WANTED**—Building estimator and general all-around construction man, capable of making plans for buildings and fully qualified to figure accurately on all classes of general construction, small and large; must be able to keep an accurate cost system and have thorough knowledge of the general routine of a builder's office. Address, giving fullest particulars, references, experience, age and salary in first letter to "Builder," P. O. Box 1162, Dallas, Texas.

**WANTED**—A first-class salesman who understands handling and selling woodwork machinery, with headquarters at Atlanta, Georgia, and to travel in surrounding territory. Address, with references, H. B. Smith Machine Co., Smithville, N. J.

**WANTED**—By a jobbing corporation of recognized standing and commercial rating, a young man for treasurer and bookkeeper; must be a stockholder to extent of \$5000; profit sharing in stock to insure his interest and co-operation in the business; must be thoroughly reliable and competent. Apply, giving details, "N. I. O.," P. O. Box No. 383, Norfolk, Va.

## AGENCIES WANTED

**AGENCY WANTED**—Sales agent, mechanical, technical man wishes mechanical or other good selling specialty for Baltimore and vicinity. W. L. Goldman, 908 Murray Bldg., Baltimore, Md.

**MANUFACTURERS' SALES CO.**, 632 Audubon Bldg., New Orleans, wishes to represent a few responsible manufacturers of high-grade specialties or strong selling lines in tributary territory.

## SITUATIONS WANTED

**CAPABLE YOUNG MAN**, reliable and energetic, with a good technical education and ten years' broad experience as correspondent, accountant and assistant executive, now employed, desires a position as manager or assistant with a growing concern in the South; in particularly close touch with Southern agricultural conditions. Address No. 1000, care Manufacturers Record.

**ALMOST** a decade with a selling branch of large corporation manufacturing air compressors, rock drills and kindred machinery; seeking new location either of office or traveling nature; will consider position in connection with office management or purchasing department. Address No. 998, care Manufacturers Record.

**HIGHWAY ENGINEER**, 17 years' experience, will be open for engagement about April 1; macadam, gravel and sand-clay roads a specialty; or will act in a consulting capacity, making examinations of materials, surveys, plans and specifications; New York State experience. Address No. 956, care Manufacturers Record.

**AN EXPERT**, practical and executive manager of sheet-metal stamping and drawing, designer of special machinery and dies. Address No. 977, care Manufacturers Record.

**COMPETENT** and energetic all-around office man who has gone through the mill of experience from copying letters to signing checks; has passed civil-service examinations as clerk and stenographer; experienced bookkeeper; capable correspondent; executive ability as office manager; licensed to practice law; can make his ability felt in position of responsibility. Splendidly qualified as private secretary. Address No. 990, care Manufacturers Record.

**Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.**

**YOUNG MAN** of good address, 23 years old, desires position as traveling salesman for first-class machinery concern; 3 years' experience in machinery business, 1 year on road; employed at present, but desires to make change; will furnish references. Address No. 989, care Manufacturers Record.

**OFFICE MANAGER** and accountant with fourteen years' training in all details of contracting, accounting, is open for position along similar lines; able, active, untiring; thirty; references. Address No. 993, care Manufacturers Record.

**SITUATION** wanted as representative for manufacturing concern in Hawaii Islands (Honolulu) or as sales agent; have a thorough knowledge of roofing materials, asbestos, metal, composition, etc.; coal-tar products, such as benzols, creosote, metallic paints, etc. Hardware specialties would also be an important factor there. I have had 19 years' experience (varied), traveling entire South approximately 14 years for a few prominent firms, and can furnish unquestionable references as to reliability and character. Address No. 991, care Manufacturers Record.

**MECHANICAL ENGINEER** now located in Northern city wishes to settle in South; eighteen years' experience in shop, drafting-room and teaching mechanical engineering, machinery, structural and power plant; would like to form connection with consulting engineer or manufacturer; technical graduate. Address No. 992, care Manufacturers Record.

**POSITION WANTED** by young married man of good habits; experienced in the building business; thorough knowledge of plans and specifications; understands construction, taking quantities from plans, estimating, etc. Address No. 972, care Manufacturers Record.

**CHEMICAL AND MECHANICAL ENGINEER** with electrical experience wants position and possibly investment with prosperous going company; has had manufacturing and sales experience; 6 years superintendent of factory employing 50 men, and lastly manager of department in large machinery house; good references. Address No. 978, care Manufacturers Record.

**CIVIL AND CONSTRUCTING ENGINEER** wants position with bridge contractor, general contractor and builder, construction company, railroad or power-development company; will consider position as sales engineer for good line; technical graduate; 13 years' experience; good references. Address No. 963, care Manufacturers Record.

## EDUCATIONAL

**RENSSELAER POLYTECHNIC INSTITUTE**, TROY, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

## BANKS

**THE PALMETTO NATIONAL BANK**, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

## FLORIDA HOTELS

**THE WINDSOR HOTEL**, Jacksonville's finest and Florida's largest and best year-round hotel. Rates reasonable. American and European plan. Operating the finest European grillroom in the South. Thomas M. Wilson, proprietor.

## CAPITAL WANTED

**MANUFACTURING CONCERN** with established business wants \$50,000 additional capital; would not object to working partner; situated in mountains of North Carolina; ideal climate and situation. Address No. 964, care Manufacturers Record.

**WANTED**—\$100,000 for five years at 6 per cent. on 5000 acres choice land in the onion and fruit district near Laredo, Texas, to develop the land and grow onions and tomatoes and put up canneries and other factories. F. P. Bickenbach, El Paso, Texas.

## BUSINESS OPPORTUNITIES

**FOR SALE**—Oldest established hardware business in East Florida; stock about \$3000; must be sold to settle estate. Address Box C, Palatka, Fla.

**TIME REGISTER**—For Sale—a fifty-man Hawley time register, cheap; in good order. Address The Fitzpatrick Mercantile Co., Washington, Ga.

**ABSTRACTS OF TITLE** a specialty. Loans negotiated. Inheritances investigated and procured. Real Estate Title Co., New Martinsville, W. Va.

**CRUSHING AND GRINDING**—A concern near Baltimore with railroad siding and excellent facilities will crush and grind all kinds of minerals and clays at lowest rates. Address No. 1001, care Manufacturers Record.

**SALESMAN** now working Middle West for largest manufacturer of enamel ware in the world would also like to sell some other good factory line. Calls twice a year on hardware and department stores in both large and small cities. Have plenty of time for good proposition. Address, with particulars about commission, etc., No. 994, care Manufacturers Record.

**WANTED**—To interest party with proposition to erect cotton mill of 5000 spindles in small town Eastern N. C.; healthful climate and water; good school facilities; no taxes for five years; in cotton belt; splendid transportation facilities; mill site practically free. Address No. 1002, care Manufacturers Record.

**AUTOMOBILE AGENCY BUSINESS**, with all accessories, garage and general repair shop, controlling some of the best agencies in the South, and offers a magnificent chance for man with from \$8000 to \$10,000. Casselman, 1018 East Main St., Richmond, Va.

**INDUSTRIAL NEGOTIATOR OFFERS HIS SERVICES**—Resourceful trader, skilled in the securing, relocating and financing of established, well-managed industries; the organization, financing and construction of railroads, public and semi-public service works, with proven ability and channels to finance. No commission basis offer will be considered. Replies only wanted from glit-edge corporations. Address No. 997, care Manufacturers Record.

**MANUFACTURING** and machine shop would like to correspond with young man of clean, Christian habits, thoroughly trained in this line, with view of investing a working interest with us. Address No. 999, care Manufacturers Record.

**FOR SALE**—Four-story brick factory or warehouse, center of city; splendid business stores and manufacturing sites with truckage and wharves. Write your wants to Douglas E. Taylor, 18 N. 8th St., Richmond, Va.

**WE WANT TRACTS OF LAND** located in or immediately adjoining thriving cities; must be well located and suitable for plating into town lots. F. J. Raymond Realty Co., Evansville, Ind.

**FOR SUBURBAN DEVELOPMENT**—For Sale—Splendid tract of land on electric line, many other advantages for subdivision; close in, adjacent to growing suburban section of this rapid-growing city; something worth buying and developing or holding for advance. R. H. Scruggs, Norfolk, Virginia.

**LAND AT AUCTION OUR SPECIALTY**. We subdivide land into town lots, or large farms into small tracts, and sell at auction. We do vigorous, up-to-date advertising, and, with our force of auctioneers, advertisers and ground men (the best in the South), we get the best results possible, and get it quick. We sell in ten States.

If you want to convert your property into cash and interest-bearing notes, write or wire us. E. M. Andrews, Manager Southern Realty & Auction Co., Greensboro, N. C.

**WOULD** like to get in communication with manufacturers of new articles of household necessities suitable for mail-order firm doing business through agents. Snyder Novelty House, Box No. 691, Birmingham, Ala.

**WANTED**—Someone to finance a water and electric-light plant and street-railway system in good live town in South. Franchises have already been granted and construction can commence at once. Address No. 984, care Manufacturers Record.

**MERCHANDISING BUSINESS** in growing town, established 15 years, desires additional capital for enlargement. Good man with \$3000 to \$6000 can have permanent position on salary and realize 6% to 15% on investment. Location healthful; climate unsurpassed. Address J. M. Pilcher, Fairhope, Ala.

**HARDWOOD PROPOSITIONS FOR SALE**. Two hardwood propositions. Particulars on application. G. W. Faulk & Son, Leesville, Miss.

**WANTED**—Factory sites; tomato, sweet potato canneries; timber lands; cut-over lands; farm lands. Give full particulars, how located; healthy climate wanted. Eden Mfg. Co., Salisbury, Md.

**FOR SALE**—Half interest in electric-light plant and water-works in town foot Ozark Mountains, Arkansas; plants invoice \$4500; 50-year franchise. For quick sale, \$300 cash; balance, terms. Plant running and in best condition. Water-works alone can be made to pay. Address J. H. Gore, Box 112, Imboden, Ark.

**SALESMAN** now working Middle West for largest manufacturer of enamel ware in the world would also like to sell some other good factory line. Calls twice a year on hardware and department stores in both large and small cities. Have plenty of time for good proposition. Address, with particulars about commission, etc., No. 994, care Manufacturers Record.

**BUSINESS WANTED**—Am looking for a good business for my son. Any business of fered must stand investigation. Address M. Record, Box 976, Cherry Valley, Illinois.

**MANUFACTURING RECIPE**, 25c.—Diploma Raleigh Fair, 1906, for "Best Manufactured Chewing and Smoking Tobacco," awarded Wm. A. Fretwell, Wilson, N. C.

## MAPS AND BLUE PRINTS

**MAPS OF TEXAS COUNTIES**—We make blueprint maps of nearly all Texas counties and several Louisiana parishes. Write for prices on those desired. Singleton Bryan & Co., Beaumont, Texas.

## TYPEWRITERS

**IF YOU** are interested in purchasing a high-grade typewriter and do not care to invest \$100 asked by the manufacturers, we would like you to investigate our remanufactured machines. Three days' trial allowed. Enterprise Exchange, Inc., 608 E. Baltimore street, Baltimore, Md.

## FACTORY SITES

**FOR SALE**—FINEST MANUFACTURING SITE IN THE SOUTH.—Twenty-eight-acre tract, within four miles of Roanoke, Va., between tracks of N. & W. and Virginia railways, with a frontage of over 2000 feet on each railroad; also a frontage of 538 feet on the Roanoke River above high water; unsurpassed location for large manufacturing industry; coal and electric power at minimum prices. For price and terms write "F. M. C.," Box 1596, Atlanta, Ga.

## INDUSTRIES WANTED

### CANNERY

**CANNERY**—A most attractive proposition is open to a reliable canning concern for the location of a cannery in a thriving section of South Carolina with good transportation facilities, where quantities of fruits and vegetables are produced. This is an exceptional opportunity and should be looked into without delay. Ask J. A. Pride, General Industrial Agent Seaboard Air Line Railway, Norfolk, Virginia.

### MISCELLANEOUS

**CONROE, TEXAS**, wants a barrel and box factory, farm implement factory, ice and electric-light plant, wagon factory. Have fine artesian water for steam. Address Secretary Progressive League.

**WANTED**—Men with capital to buy interest in established concerns and to establish manufacturing plants; 10,000 hydro-electric horse-power, center of the hardwood district of the South and East; two furniture plants here; want chair, table and stove factories; stave and pulp mills; abundant cheap labor; low cost of living; fine water; hosiery and knitting mills do well in this territory. Write Board of Trade, Asheville, N. C.

**NORFOLK, VIRGINIA**, is a growing, thriving city; splendid climate; eight trunk-line railroads; great harbor; steamships to domestic and foreign ports and many other advantages; liberal inducements for manufacturing plants, home seekers and those who want to build and sell houses. Address Ballentine Realty Corporation, Norfolk, Va.

**COME TO BRIDGEPORT, ALA.**, with your factory. We want you; will operate with you; free sites; exemption from taxation; river navigation year round; two trunk railroads and two branch lines; abundance of raw material, cotton, coal, iron, timber and stone; excellent location for cotton, iron and woodworking industries; nine miles from 60,000 horse-power electric plant; have fine water-works, sewerage and electric lights; noted for its many beautiful homes; grand scenery and delightful climate. Come and investigate, or write Chamber of Commerce, Geo. R. Van Arsdall, Secretary, Bridgeport, Alabama.

## INDUSTRIAL PLANTS FOR SALE

### FLOURING MILL

**FOR SALE**—1300-barrel flouring mill plant; 150,000 bushels elevator capacity; Hopkinsville, Ky.; fine property; cheap; good terms. Rush C. Watkins Co., Realty Bldg., Louisville, Ky.



# Classified Opportunities

## ELECTRIC LIGHT PLANT

**FOR SALE AT A BARGAIN**—Complete equipment of an electric-light plant, consisting of one 1436 mill type Murray Corliss engine, 2 85 H. P. Atlas tubular boilers, 1 Gen City heater, 3 boiler-feed pumps, smokestacks and settings, 1 80 K. W. single-phase A. C. generator, skeleton switchboard and instruments. Will sell all or any part. For prices and description address City Light and Water Plant, Coleman, Texas.

## FLOUR AND CORN MILL

**A FIRST-CLASS FLOUR AND CORN MILL** for sale in middle Tennessee; mill three years old. Address No. 985, care Manufacturers Record.

## SAW AND PLANING MILL

**FOR SALE**—Complete saw and planing mill; capacity of sawmill, 25 M. feet daily; planing mill, 40 M. feet daily; all in running order. Address P. O. Box 762, New Bern, N. C.

**FOR SALE**—Complete saw, planing and rift flooring mill; capacity 40,000 feet daily; all in running order; locomotive, three miles rail; three million feet pine, one million feet cypress; located ten miles Tallahassee, Florida; will sell complete or will dismantle. Timber makes splendid portable mill proposition. Want competent man to inventory and appraise machinery and equipment. Address A. H. Powell, Managing Director, Oxford, N. C.

## MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

**RELIABLE**, accurate and definite information regarding the possibilities for investment in high-grade land propositions in Mississippi and Louisiana; fourteen years' successful operation; references exchanged. Walter G. Hodges, Meridian, Miss.

**BEFORE YOU BUY LAND** or make an investment in the South or Southwest send for a copy of my "Investor and Land Buyer" with list of splendid properties for sale; free on application. Jo A. Parker, Parma, Mo.

**FOR SALE**—Ten acres in the rich oil and gas district Eastern Oklahoma, the richest section in the world; good soil. Price \$100; \$10 cash; \$5 per month. M. F. Owens, Oklahoma City, Okla.

**HUNDRED AND FORTY THOUSAND ACRES RANCH LANDS**, Val Verde county, Texas (has natural growth rubber plant), 13 acres, 10,000 So. Ala., \$450 acre, 10,000 acres near Hastings, Fla., famous Irish potato section, 1/2 acre. Power & Brooks, Montgomery, Ala.

**HOUSTON, TEXAS**—120 acres between the city and the great \$10,000,000 Rice Institute ripe for subdivision; 200 per cent. profit awaits a live investor; best proposition ever offered in this fast-growing city. Write for full particulars, W. T. Dickey, Owner, 808 Paul Building, Houston, Texas.

**PHOSPHATE**—We have listed four excellent phosphate properties, two hard rock and two pebble. These have been thoroughly prospected and analyzed by prominent engineering chemists. Locations are for outright sale and can be delivered. Our best pebble proposition is in our hands for a short time only. If interested, advise quick. Marcus E. Sperry & Co., Tampa, Florida.

**640 ACRES** in Ward county at \$5 per acre. 640 acres in Reeves county, all tillable, at \$12.50 per acre. 181 1/2 acres virgin pine land, all level, 8 miles from shipping station, fine farming country, 97 cents due State in 35 years, \$4 bonus. Ranches, farms, timber lands in all parts of the State. Correspondence solicited. J. M. Dunn, Austin, Tex.

**FARMS, FACTORY SITES, TIMBER**—With a very much larger list to select from than our competitors, with over 27 years' experience in this business, and having farmed for nearly 40 years near Norfolk, the senior member of this firm is capable of properly advising all farm seekers as to the best lands, best locations, and land most suited for special crops, or for general farming, and all we ask is that you consult our list before buying. H. C. Hoggard & Co., Norfolk, Va.

**FOR SALE**—Bost Mills, Cabarrus county, N. C., 500 acres, including water-power and mineral land. Address J. W. Cannon, Concord, N. C.

**FOR SALE**—2000 acres of good land and waterfall on Flint River, all in a body; well timbered; five miles from railroad. Also a nice seven-room dwelling and store at Pleasant Hill. J. C. Pye, Woodland, Ga.

## COAL LAND FOR SALE

**COAL**—14,000 acres of the choicest coal lands in West Virginia. R. B. Chaffin & Co., Inc., Richmond, Va.

**FIVE THOUSAND ACRES** Petersburg coal in West Virginia, located in Lewis county, West Virginia, one mile from B. & O. Railroad; easily accessible by spur; adjoins a field of 30,000 acres owned by Elkins interests; excellent gas and steaming coal. A great part of this acreage carries the Red Stone coal. This is a bargain at \$30 an acre, the price at which we offer it. Write us if interested in coal lands in any part of West Virginia. Address West Virginia Tri-Products Company, Howard L. Swisher, President, Morgantown, West Virginia.

## CUT-OVER LANDS

**CUT-OVER TIMBER TRACTS**.  
50,000 acres cut-over pine lands, Miss. .... \$6.50  
30,000 acres cut-over pine lands, La. .... 6.00  
75,000 acres cut-over pine lands, Tex. .... 5.00  
18,000 acres cut-over hardwoods, La. .... 4.50  
Marsh Lands for Reclamation.  
30,000 acres in a body, Gulf Coast of La. 3.00  
Timber Lands.  
20,000 acres L. L. Y. pine, Fla., cut 3500 ft. 7.00  
15,000 acres L. L. Y. pine, Ala., cut 7000 ft. 21.00  
30,000 acres hardwood, cut 10,000 ft. (60% red gum) ..... 10.00  
Finest red gum proposition South.  
Wm. R. Taylor, 508 Perrin Bldg., New Orleans, La.

## TIMBER LAND FOR SALE

**OVER 200,000,000 feet** of hardwood timber in North Carolina; large percentage poplar and white pine; valuable property; safe investment. Price \$400,000 in fee.  
Several hundred million feet of hardwood timber with new and up-to-date mill in Georgia; a bargain. Price on application.  
40,000,000 feet, nearly all pine, with complete mill, on railroad in Eastern North Carolina; fine logging proposition; a cheap and very desirable property; important to sell at once. Price \$87,000.

15,000 acres, in one body, in Northern Georgia, 1 1/2 miles from railroad; easy logging; 4000 to 5000 feet per acre. Price \$9 per acre in fee.  
12,000,000 to 15,000,000 feet, nearly all pine, from 1 to 2 miles from railroad, in Southern Virginia; fine logging; rate to Pittsburgh, 16 1/2¢; Philadelphia, 16¢. Price \$45,000.

Other fine timber properties. Write for data. H. W. Hilkey & Co., 729-30 Southern Building, Washington, D. C.

**FOR SALE**—40 acres timber land in south central Missouri; six acres cleared; 28x28 box house; all fenced; near railroad town; good title. Price \$600 if sold at once. Address J. R. Bachelder, Route 3, Box 4A, Paducah, Ky.

**ARKANSAS**—1240 acres of first-class timbered land in two miles of railroad, estimated to cut:  
5,525,000 feet white oak.  
745,000 feet ash.  
550,000 feet hickory.  
665,000 feet hack berry.

Total ..... 7,485,000 feet.  
Price \$20 per acre; easy terms. Address W. B. Lane, Hope, Ark.

**WANTED**—To sell one tract of timber within half mile of station on Southern Railway; can cut 250 M. feet pine and 250 M. hardwood; can be shipped on a 4 1/2-cent freight rate basis to Norfolk. Also one tract located on Virginian Railway; same rate of freight to Norfolk; nearly all pine and will cut about two million feet; railroad runs through piece of timber. Apply to V. D. Thorp, Newsoms, Va.

**85 ACRES**, adjoining railroad, near Richmond, Va., all in good second-growth timber. The saw timber and cord wood alone worth enough to almost pay for the place and get the land nearly free; watered by two branches; \$200. Green & Redd, 30 North 9th street, Richmond, Va.

**FOLLOWING round timber in Florida**.  
15,000 acres, De Soto county, at \$7.50 acre; fee simple; warranty deed; third cash; balance one, two years at 6 per cent.  
50,000 acres, Osceola county, at \$10.50 acre; fee simple; warranty deed; \$100,000 cash; balance easy terms at 6 per cent.

Numerous other offerings. Write us. Marcus E. Sperry & Co., Tampa, Fla.

**4000 ACRES** hardwood timber land in Catahoula parish, Louisiana; navigable river on each side of tract; will cut, at conservative estimate, fifteen million feet of lumber, almost all of which is white and red oak and gum; the soil is alluvial, buckshot and sandy loam; will make magnificent agricultural land after the timber is removed; a railroad now under construction runs right by the tract, which could be made an A-A colonization project. Price \$16 per acre, which buyer can get out of timber alone; terms easy. Barney & Hines, Inc., 1353 Central Bank Bldg., Memphis, Tenn.

## TIMBER FOR SALE

**FOR SALE**—40,000,000 feet of first-class hardwood and cypress, situated right on a railroad. Apply to E. J. Iles, Alexandria, La.

## LUMBER FOR SALE

**FOR SALE**—100,000 feet poplar boards, 100,000 feet hickory in axies and 3-in. slabs, 300,000 feet white and red oak, in quarter sawed and plain.  
Address J. J. Littlejohn, Jonesville, S. C.

## YELLOW LOCUST POSTS

**FIVE THOUSAND** yellow locust posts for sale; mountain grown; the most durable and valuable of all posts; large sizes for gate posts; all sizes for fencing. Pantops Orchard Co., Charlottesville, Va.

## FARM AND TIMBER LANDS

**FARM AND TIMBER LANDS**—We have attractive offerings in farm, yellow pine and hardwood timber lands. We also handle coal and ore properties. Correspondence from interested parties invited. Provident Trust & Security Co., Land Dept., Walton Bldg., Atlanta, Ga.

**FOR SALE**—4500 acres good timber, farming and fruit lands near Guin, Ala., on Frisco, 87 miles west Birmingham; county high school; pipe road; fine water; 500 to 800 feet above sea; good healthy climate; no whiskey; no negroes; \$10 to \$40 per acre; cash and terms. J. M. Allman, Owner, Guin, Ala.

**I HAVE BARGAINS IN TIMBER TRACTS**, large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.

Wm. R. Taylor, Land and Timber Investments, 508 Perrin Building, New Orleans, La. Established 1898. Sales over \$5,000,000.

## COLONIZATION LANDS

**ALABAMA COLONIZATION LANDS**—Large tracts unimproved lands near Mobile; great price; also in other parts of State; low prices; no better propositions in South; productive soil; a present opportunity. Write us. Alabama State Agricultural Land Co., Center, Alabama.

## PLANTATIONS FOR SALE

**FOR SALE**—A fine old ante-bellum plantation, 12 miles from Savannah, Georgia, on rail and automobile road. It is the cheapest property in the South. Must be sold. \$10 per acre. For further information address Brewster Lumber Co., Savannah, Georgia.

**MISSISSIPPI**—3555 acres of good hill cotton land for sale; now in successful operation; well supplied with negro labor. The plantation lies between two branches of the Illinois Central R. R.; nearest shipping point four miles from the dwelling. The land corners within half mile of the shipping point. A sufficiency of cabins for tenants, stables, cribs, cotton pens and all outbuildings; 45 head of mules and horses, cows, farming implements and feedstuff. Price very low; terms good. Address A. C. Leigh, Grenada, Miss., bona-fide owner.

## FARM, FRUIT AND TRUCK LANDS

### ALABAMA

**440 ACRES** good land, 4 new dwellings, 3 barns sufficient 70 animals, 4 wells, gasoline pump, running water, blacksmith shop; mile Riverside, Ala.; 200 acres cleared; clubhouse adjoining; improvements worth more than asked; \$5000; terms. B. B. Hudson, Birmingham, Ala.

**C. C. MECHEM**, Bank of Mobile Building, Mobile, Ala., makes a specialty of handling small tracts of land on easy terms. He guarantees his titles in the Title Insurance Co. of Mobile, Alabama, charges no interest on deferred payments and pays all taxes until deed is delivered. Call and see him.

### FLORIDA

**FLORIDA FARMS ARE FORTUNES**—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Milton Land & Investment Co., Marianna, Fla.

**FOR SALE** by owner, a few five-acre garden tracts on St. Johns River, seven miles from Jacksonville; good land; finest shad fishing in the world; easy terms. Write for other information. Box 802, Jacksonville, Fla.

**FLORIDA FRUIT AND TRUCK LANDS**—We offer 10-acre tracts in that part of the State of Florida lying in Hillsborough county and Lake Butler region, in the Pinellas peninsula, on the west coast of Florida, on the Gulf of Mexico; with its elevation and rolling hills is especially suited for fruits of all kinds—grapefruit, oranges, grapes, dates, figs, bananas, peaches and other fruits, as well as vegetables, potatoes, corn, beans, peanuts and all the varieties that can be produced anywhere. The Tarpon Springs district offers the most favorable conditions for farmer, home seeker and investor. Fertile land in small tracts, easy monthly payments; guaranteed title. Investigation invited. If you want a bargain and a home in the most desirable part of Florida, write now for particulars and reservation. Tamm & Tarpon Springs Land Co., Tampa, Florida.

### LOUISIANA

**HEADQUARTERS FOR NORTH LOUISIANA LANDS**—Large and small tracts suitable for plantations, small farms, orchards or truck gardens. Climate, soil and health conditions here are unsurpassed. The staple crops of the North grow in this section alongside of cotton and cane. A great stock country. Write for particulars stating your requirements. References, my customers and any bank in Shreveport. W. A. Jones, Authority on North Louisiana Lands, Shreveport, La.

### TEXAS

**18,000 ACRES LAND**, 90 per cent. rich and fertile, 30 miles from Alice, Texas, in new county of Brooks, at \$6 per acre. You can make \$4 per acre on this land in two years. Come and see it. Free & Williams, Austin, Tex.

**THE BLACK LANDS OF NORTH TEXAS** are justly famous as the best in the world for the production of cotton, corn, wheat and oats—not one crop, but four. Once Goodwin's Denton Creek Subdivision consists of more than 8000 acres of this land, situated on the Denton and Wise county line, 50 miles northwest of Dallas, and is offered at reasonable prices—thirty to forty dollars per acre—and upon such terms that any man with a few hundred dollars cash can easily meet. The gradual and steady enhancement in value of such land should appeal to investors, while the very easy terms upon which it is offered should appeal to the farmer without a home. Address Feuntun Ray, Decatur, Texas.

**THE FRIO VALLEY WINTER GARDENS**, La Salle county, Southwest Texas, a colony of 100,000 acres level rich black sandy loam in famous artesian belt; grow oranges, figs, Bermuda onions. We are opening Fowlerton, a new town on new railroad in heart of the colony. Guaranteed improvements on town-site. A 10-acre farm and free residence lot on terms of \$15 cash; balance \$10 monthly. Write for booklet A, prices, plans, etc. Fowler Brothers Land Co., Frost Building, San Antonio, Texas.

**2464-ACRE FARM** on Lavaca River, 5 miles north of Edna, Texas; 500 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 5000 bearing pecan trees; will sell or trade for good city property at \$35 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

**10,000 ACRES** Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

## VIRGINIA

**BARGAIN SALE**—One of the leading stock and grain ranches in county; large improvements; creek and spring watered; plenty timber; grand colonial dwelling, commodious barns and stables; well fenced; near town and railroads; R. F. D. 440 acres. Easy terms for quick sale. For full particulars, Box 72, R. F. D. No. 3, Crewe, Va.

## MACHINERY AND SUPPLIES

**FOR SALE**—Complete line of chair machinery and fixtures to equip a chair factory for the manufacture of box-seat and round-post chairs, with a capacity of 900 chairs per day. One band resaw, saw grinder, setting and brazing machines, all used thirty days. American machine No. 502. Gray Bros., China Grove, N. C.

## FINANCIAL

**FOR SALE**—7 1/2 per cent first mortgage real estate bonds. Kauffman Investment Co., 735 American National Bank, Oklahoma City, Okla.

**THE 7 per cent. cumulative preferred stock** of the Virginia Farm Development Corporation is practically first mortgage bonds, and the interest very much larger than bonds pay. Will stand a most rigid investigation. Southern Finance Co., Inc., Norfolk, Va.

**MORTGAGE LOANS**, carefully selected, on good cotton and corn farms in Southern Oklahoma; 5-year, 6%, \$250 to \$2500, to suit investors. This county's population, 25,000; assessed value, \$10,000,000; one of largest cotton producers. Can place your money very safely; 25 years' experience; 10 years bank cashier here; intimately acquainted with land, people, conditions; abundant references; circular. Write J. G. James, Roff, Okla.

## PATENT ATTORNEYS

**EUGENE C. BROWN, ENGINEER** and Patent Lawyer, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

**PATENT YOUR IDEAS**—\$100,000 offered for one invention, \$3500 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advertise your patent for sale at our expense. Chandlee & Chandlee, patent attorneys, 978 F street, Washington, D. C.

**PATENTS Secured or Fee Returned**. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$18,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

## PATENTS FOR SALE

**WE HAVE** recently secured the following patents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.: A. J. McArthur and J. R. Tucker, steam oiler; Francis W. Walraven, automatic drain valve; John C. Walshall, cotton chopper attachment for cultivator; Wenzel Wolcheldorfer, conveyor clean; Ira E. Neer, cotton picker; Michael Nielsen, pipe dangle; J. W. Potts, vault cover; W. J. Devlin, churn; Bernard Devlin, safety gas cock; Mrs. Phoebe A. Earles, windrow attachment for roving machine; Elba F. Fink, umbrella; Geo. W. Holland, wagon box; A. Hanson, explosive engine; W. E. Akers, paint and paste strainer; Samuel L. Harris, rail joint; Owen H. Hess, gudgeon for spiral conveyor; Albert Carlson, hub brake; Geo. D. Coates, repair heel; B. A. Deatherage, tire; Fred Buchler, churn; Walter C. Gambrel, engine stopper; Bennett Book, safety razor; H. E. Horner, garbage strainer; Warren E. Dean, staple; M. G. Chabiburg, railroad tie; B. M. Adams, leaf turner.



# PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

## GOVERNMENT PROPOSALS

**PROPOSALS FOR CAR COUPLERS,** Wrought-iron and Steel Pipe, Cast-iron Pipe and Fittings, Lead Gaskets, Gate Valves, Fire Hydrants, Asbestos Gaskets, Rubber Gaskets, Hammers, Wooden Tie Plugs, Steel Tapes, Canvas, Paper, Card-board, Linen Tags, and Asphaltum Varnish. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. April 29, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 704) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City, and 614 Whitney-Central Building, New Orleans, La.; also from the U. S. Engineer Offices in the following cities: Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Commercial Club, Kansas City, Mo.; and Chamber of Commerce, Quincy, Ill. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**PROPOSALS FOR THE PURCHASE OF** the Porto Bello Rock-crusher Plant Equipment, consisting of Rock Crushers, Rollers, Condenser, Engines, and Rock-conveying System, offered for sale by the Isthmian Canal Commission, which are no longer needed. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. May 21, 1912, at which time they will be opened in public, for the purchase of the above-mentioned articles. Blanks and general information relating to this Circular (No. 696) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La.; and 1096 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**TREASURY DEPARTMENT,** Office of the Supervising Architect, Washington, D. C., April 13, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 25th day of May, 1912, and then opened, for the construction (including planning, engineering, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of the United States postoffice at West Point, Miss. The building to be one story and basement, of approximately 4100 square feet ground area, brick faced, with stone and terra-cotta trimming and tile roof. Copies of the drawings and specifications may be obtained from the office of the custodian of the site at West Point, Miss., or at this office, at the discretion of the Supervising Architect, JAMES KNOX TAYLOR, Supervising Architect.

**TREASURY DEPARTMENT,** Office of the Supervising Architect, Washington, D. C., April 6, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 17th day of May, 1912, and then opened, for an electric passenger elevator in the United States postoffice and courthouse, Great Falls, Mont. In accordance with the drawings and specification, copies of which may be obtained at this office at the discretion of the Supervising Architect, JAMES KNOX TAYLOR, Supervising Architect.

**GOVERNORS ISLAND, N. Y. H.,** April 1, 1912. Sealed proposals, in triplicate, for furnishing Fuel, Gasoline, Mineral Oil, and Forage and Straw (three months' and a year's supply) required in Eastern Division, during year commencing July 1, 1912, will be received here until 10 A. M. May 1, 1912. Information furnished on application. J. B. BELLINGER, C. Q. M.

**U. S. ENGINEER OFFICE, Mobile, Ala.,** March 22, 1912. Sealed proposals for construction of the 80-foot twin-screw motor survey boat Dauphin will be received at this office until 11 A. M. April 22, 1912, and then publicly opened. Information on application. C. A. F. FLAGLER, Major, Engrs.

**U. S. ENGINEER OFFICE, GALVESTON, TEXAS,** April 13, 1912. Sealed proposals for dredging the Houston Ship Channel will be received at this office until 12 M. May 15, 1912, and then publicly opened. Information on application. EARL I. BROWN, Major, Engrs.

**U. S. ENGINEER OFFICE, Jacksonville, Fla.,** April 15, 1912. Sealed proposals for construction of the motor survey launch "Captain J. J. Meyer" will be received at this office until 12 M. May 15, 1912, and then publicly opened. Information on application. J. R. SLATTERY, Capt., Engrs.

**GOVERNOR'S ISLAND, N. Y. H.,** April 15, 1912. Sealed proposals, in triplicate, for furnishing Coal required in Eastern Division during year ending June 30, 1913, will be received here until 10 A. M. May 15, 1912. Information furnished on application. Chief Quartermaster.

**SUMP PIT AND PUMPHOUSE, INCLUDING** Machinery, for Marine Corps, Quartermaster's Department, Washington, D. C., April 9, 1912. Sealed proposals, in duplicate, will be received at this office until 11 A. M. on April 29, 1912, and then be publicly opened, for the construction at the Marine Barracks, Navy-yard, Norfolk, Virginia, of one sump pit and pumphouse, including machinery. Plans and specifications may be obtained from the commanding officer, Marine Barracks, Navy-yard, Norfolk, Va., and also this office. The Government reserves the right to reject any or all proposals, to waive defects or informalities therein, and to make award under any item or combination of items. C. L. McCawley, Lt.-Col., Asst. Quartermaster, in Charge of Department.

## NEW BOND OFFERINGS

### North Carolina Drainage District Bonds For Sale.

The Chairman of the Board of Commissioners of Muddy Creek Drainage District will receive at his office in Kenansville, N. C., until 12 o'clock M. April 29, 1912, sealed bids for the purchase of twenty-seven thousand (\$27,000) dollars of Muddy Creek Drainage District bonds, to be issued in accordance with the laws of the State of North Carolina, Public Acts of 1909, amended 1911, bearing interest at 6 per cent. per annum, payable semi-annually. Bonds payable in ten (10) equal installments, the first installment of principal to be due and shall mature at the expiration of three (3) years from date of issue, and one (1) installment for each succeeding year for nine (9) additional years, to be issued in denominations to suit purchaser, and payable at such time and place as may be designated by the purchaser upon acceptance of bid.

These bonds are exempt from all county or municipal taxation of assessment, general or special, and the interest thereon shall not be subject for taxation as for income, nor shall said bonds be subject to taxation, nor the coupons thereon, when constituting a part of the surplus of any bank, trust company, or other corporation; and are deductible from the assets of such corporation in ascertaining the taxable value of the shares of such corporation.

Bids invited for the whole or any part of said bonds.

Certified check of the proposer in the sum of five hundred (\$500) dollars required to accompany bids for the whole or any part of the issue.

Right to reject any and all bids is hereby reserved. Bidders may submit form of bonds with bid, or the same will be issued in form requested by successful bidders at the time of acceptance of bid.

Any further information concerning the legality of the issue may be had by application to J. A. Gavin, Jr., attorney for the Commissioners, Kenansville, N. C.

This 8th day of April, 1912.  
Chairman Board of Commissioners,  
Muddy Creek Drainage District,  
Chinquapin, N. C., Duplin County.

### Sealed Bids for Bonds

Clarksburg, W. Va.

The Board of Education of Clarksburg School District, Harrison County, West Virginia, offers for sale \$275,000 of its 5 per cent. gold coupon bonds, dated September 1, 1911, and payable on September 1, 1941, subject to previous redemption on any interest day after September 1, 1921. The bonds will be sold to the highest bidder or bidders in writing, to be approved by the Board, for cash, for not less than par and accrued interest from September 1, 1911. Sealed bids in writing for all or any part of the bonds will be received until May 6, 1912, at 2 P. M. Bids must be addressed to James N. Hess, Secretary of said Board, Clarksburg, W. Va., endorsed "Bid for Building Bonds of 1911," and accompanied by certified check, payable to the order of the said Board, for 5 per cent. of the amount of the bid. Bids will be opened at the office of the Board, Room 431 Empire Building, Clarksburg, W. Va., on May 6, 1912, at 2 P. M. The right to reject any and all bids and to allot smaller amounts than are bid for is reserved. Bonds awarded must be paid for upon delivery, and on failure of any bidder to pay on or before May 16, 1912, for the bonds awarded to him, the check accompanying his bid will be forfeited to the Board, which will then have the right to resell such bonds. For full information address said Secretary, or Arthur K. Thorn, President of said Board, or Charles B. Johnson or George M. Hoffheimer, Counsel for said Board, Clarksburg, W. Va.

### Sale of Bonds

Bids are wanted by the undersigned at No. 1207 Hampton street, Columbia, S. C., for \$25,000 of first mortgage gold bonds of the State Agricultural and Mechanical Society of South Carolina, said bonds being of the denomination of \$500 each, maturing 25th of August, 1931, secured by a mortgage of the tract containing one hundred (100) acres whereon are situated the buildings and grounds of said Society, and bearing interest at the rate of six per centum per annum, payable semi-annually. Bids will be received for all of said bonds on any part thereof.

D. G. ELLISON,  
Treasurer of State Agricultural and Mechanical Society of South Carolina.

## Municipal Bond Sale

Sealed proposals for the sale of \$30,000 City of Kosciusko, Miss., Coupon Sidewalk and Street Improvement Bonds will be received until 12 o'clock noon, by the undersigned bond committee, at the Mayor's office in said city, on May 7, 1912. Said bonds bear interest at the rate of 5 per cent. per annum, payable semi-annually, and mature twenty years from July 1, 1912. All bids must be accompanied by a certified check for 2 per cent. of the par value of the bonds bid for, said checks to be returned if bids not accepted. The assessed valuation of the property of the city of Kosciusko is \$1,350,000, based upon a three-quarter valuation. The outstanding bonded indebtedness is \$25,000. The right is reserved to reject any and all bids.

W. M. NOAH, Mayor.  
J. H. HOLLINGSWORTH, Clerk.  
J. W. RIMMER, Alderman.  
Committee.

Kosciusko, Miss., April 9, 1912.

## N. C. Drainage District Bonds, Issued Under the Laws of the State, For Sale

Sealed bids will be received at the office of the undersigned at Goldsboro, N. C., until May 4, 1912, at 12 o'clock M., for the purchase of thirty thousand (\$30,000) dollars of Wayne County Drainage District bonds to be issued in accordance with the laws of the State of North Carolina, Public Acts of 1909, as amended by Public Laws of 1911, bearing interest at 6 per cent. per annum, payable semi-annually, said bonds payable in ten (10) equal installments; the first installment of principal to be due and shall mature at the expiration of three (3) years from date of issue and one (1) installment for each succeeding year for nine (9) additional years, to be issued in denominations to suit the purchaser, and payable at such time and place as may be designated by purchaser upon acceptance of bid.

These bonds are exempt from all county or municipal taxation of assessment, general or special, and the interest thereon shall not be subject to taxation as for income, nor shall said bonds be subject to taxation nor the coupons thereon, when constituting a part of the surplus of any bank, trust company, or other corporation; and are deductible from the assets of such corporation in ascertaining the taxable value of the shares of such corporation.

Bids invited for the whole or any part of said bonds.

Certified check of proposer in the sum of \$500 required to accompany bids for the whole of such issue, or proportional part less than for whole.

Right to reject any and all bids reserved. Bidders may submit form of bonds with bid, or the same will be issued in form requested by successful bidders at the time of acceptance of bid.

The lands affected by this act are about three thousand acres, and are easily worth one hundred thousand dollars.

Any further information concerning legality of issue may be had by application to W. T. Dortch and Wentworth W. Pierce, Attorneys for the Board of Drainage Commissioners, Goldsboro, N. C.

All bids must be submitted to the undersigned at his office at Goldsboro, North Carolina, by May 4, 1912.

This 6th day of April, 1912.  
JOHN R. WOOTEN, Chairman,  
Board Commissioners of Wayne County  
Drainage District Number One.

## PAVING

### Grading, Culvert Work and Graveling

McKenzie, Tenn.  
Sealed proposals will be received by the Mayor and Board of Aldermen of the City of McKenzie, Tenn., until 2 P. M. April 24, at the Mayor's office, for the necessary grading, culvert work and graveling of certain streets in the city. For all necessary information address F. D. Walpole, Recorder, McKenzie, Tennessee; C. H. Jenks, Engineer, Union City, Tennessee.

## Sidewalks and Curbing

Uniontown, Ala.  
The Town of Uniontown solicits bids on the laying of concrete walks and curbing with gutters. Amount of work approximately \$10,000. Instructions to bidders, contract and specifications mailed on application.

DUD. P. COLEMAN, Mayor.

## Road Grading

Madisonville, Tenn.  
Sealed proposals will be received by the Monroe County Road Commission at their office in Madisonville, Tenn., until 1 P. M. April 24, 1912, for the grading of about 100 miles of road in Monroe county, Tennessee, according to the plans, specifications and profiles on file in the office of the Engineer in Madisonville, Tenn.

Proposals will be asked for in sections or as a whole.

Proposals are to be made on blank forms furnished by the Commission.

Certified check for \$300 will be required with each proposal on each separate section, or \$1000 with proposal for the whole.

The right is reserved by the Commission to reject any and all proposals.

## To Paving Contractors

Bainbridge, Ga.  
Sealed proposals on blank forms furnished by the city and addressed to "The Mayor and Board of Aldermen," Bainbridge, Georgia, will be received until 7:30 P. M. May 15, 1912, for furnishing all material, equipment and labor for the following work:  
Approximately 22,000 square yards of street paving (Vitrified Brick, Wood Block, Bituminous, Granatoid and Asphalt will be considered), with all necessary drainage and granite curb as specified.

Each bid must be accompanied by a certified check made payable to the Mayor for twenty-five hundred (\$2500) dollars.

Right is reserved to reject any or all bids. Plans and specifications can be seen at the office of the consulting engineers, or specifications may be obtained by writing them at Box No. 582, Savannah, Ga.

W. O. FLEMING, City Clerk.  
Consulting Engineers:  
H. S. JAUDON ENGINEERING CO.,  
Atlanta, Ga. Savannah, Ga.

## Road Contract to Let

Aberdeen, Miss.  
Notice is hereby given that the Good Roads Commission of Supervisors' District No. 4, Monroe county, Mississippi, will receive sealed bids or proposals at the office of the Chancery Clerk of said county, in the City of Aberdeen, until the 7th day of May, A. D. 1912, at 2 o'clock P. M., for the purchase of about 52,000 cubic yards of rock and gravel for surfacing twenty-six (26) miles of public highway in said district.

And also additional bids or proposals will be received at the same time and place for hauling and placing said 26 miles of rock or gravel surfacing material according to the plans and specifications now on file in said Clerk's office and with the Clerk of the Commission, P. O. Box 415, Aberdeen, Miss.

The longest haul five (5) miles. Average haul 2 1/2 miles.

All bids must be accompanied by a certified check of \$1000 on some good and solvent bank or trust company in the State of Mississippi.

The Commission reserves the right to reject any and all bids.

J. L. SHELL,  
W. H. HENDERSON,  
W. H. CARLISLE.

## BRIDGES

### Bridges for Madison Parish, Louisiana

The Police Jury of said parish will receive bids on Wednesday, 1st May, 1912, for the construction of the following bridges:

First—Over Willow Bayou on the road leading north from Tallulah, 80-foot span.

Second—Over Panther Lake on the road leading north from Waverly, 64-foot span.

Third—Over Suck Bayou south of Waverly, 120-foot span.

Fourth—Over Little Fork south of Waverly, 120-foot span.

Fifth—Over a slough just north of Quebec Station, 45-foot span.

Said bridges to have concrete abutments and to be capable of sustaining the weight of a 20-ton traction engine. Roadway 12 feet. Right reserved to accept or reject any bid. Engineers to furnish their own plans, one of which to be selected by the Board.

Bond or certified check required in a sum fixed by the Board. Bids to be directed to A. I. Slack, Secretary, Tallulah, La.

This 2d April, 1912.

## Tampa Bridge

### NOTICE TO BRIDGE BUILDERS.

Contractors experienced in bridge construction are invited to tender sealed bids for the construction of a highway bridge to be built in the City of Tampa, Florida, carrying Lafayette street over the Hillsboro River, in accordance with the detail drawings and specifications on file in the office of the Board of Commissioners of Public Works of Tampa, Fla., and hereinafter referred to as the Board, and also in the office of the Consulting Engineers, Messrs. Boller, Hodge & Baird, 149 Broadway, New York City.

Bids will be received by the Board at their office in the City of Tampa, Fla., not later than noon of Wednesday, May 7, 1912.

A certified check for \$500, made payable to the Board, must accompany each bid. Such check will be returned to the unsuccessful bidders immediately after the bids are opened, and to the successful bidder unless he fails to execute the contract within ten days after such contract is awarded to him.

A bond satisfactory to the Board for the sum of twenty-five per cent. of the contract price will be required.

All bids must be made on form of proposal, which, with the contract, specifications and bond, can be obtained on application to the Clerk of the Board.

Bidders can secure a set of all drawings for this work by depositing ten dollars with the Clerk of the Board, which deposit will be returned on the return of the drawings.

The above work covers two reinforced concrete arch spans of 82 feet clear span, one deck Scherzer rolling lift draw, of two wings of 93 feet span, and concrete retaining walls for the approach to this structure.

The City of Tampa reserves the right to reject any and all bids.

CITY OF TAMPA.  
By D. B. McKAY, Chairman Board of Commissioners of Public Works.  
Attest: ALLEN THOMAS, Clerk.  
BOLLER, HODGE & BAIRD,  
Consulting Engineers.



# PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

## BRIDGES

## To Steel Bridge Builders

Notice is hereby given that at the regular meeting of the Board of Supervisors, to be held in the Courthouse in Batesville, Miss., on the first Monday of April, A. D. 1912, bids will be received for building three steel bridges, the contract to be awarded to the lowest responsible bidder.

Plans and specification on file at the office of the Chancery Clerk in Batesville, Miss.

R. W. DRAPER, Clerk,  
Batesville, Miss.

## PUBLIC BUILDINGS

## School Building

Lake Charles, La.

Bids will be received until twelve o'clock noon April 25, 1912, for the erection of any one or all of the four two-story-and-base-ment Brick School Buildings at Lake Charles, La. Contractors submitting one estimate on all four of the buildings will be required to furnish separate estimates on each. Plans and specifications and conditions for estimating can be had at the office of Favrot & Livaudais, Ltd., Architects, No. 539 Gray Street, New Orleans, La., and can be seen at the office of E. S. Jenkins, Superintendent, Lake Charles, La.

## Notice to Architects

On Wednesday, May 1, the Building Commissioners of the Yalobusha county courthouse building at Water Valley, Mississippi, will inspect plans and specifications and hear architects with a view of selecting architect's plans and specifications for the new courthouse building. Said building is to be on old foundation partially destroyed by fire, and old walls utilized as far as practicable.

Address  
J. G. MCGOWEN,  
Secretary Building Commissioners,  
Water Valley, Mississippi.

## Notice to Architect

Galveston county invites competitive bids for plans and specifications for an up-to-date, modern and strictly sanitary jail building, to be four stories in height, to conform in architecture with that of annex building, to accommodate no less than 200 prisoners. Other required information will be given by the Building Committee when applied for. County reserves right to reject any or all bids. Bids and plans to be in County Auditor's office at Galveston, Texas, not later than May 1, 1912.

JOHN M. MURCH,  
County Auditor.  
Galveston, Texas, March 19, 1912.

## WATERWORKS AND SEWERS

## Sewer Construction

Department Public Works, Augusta, Ga., April 6, 1912.

Sealed proposals, addressed to the City Council of Augusta, Ga., will be received by the Health Committee until Tuesday, April 23, 1912, 12 o'clock noon, for furnishing all labor and material and constructing approximately 3700 linear feet of Brick Sewer, 36 to 54 inches in diameter, with manholes, catch basins, etc. Also at the same time there will be received proposals for furnishing labor and material and constructing all Pipe Sewers, 8 to 24 inches in diameter, which may from time to time be ordered by the City Council during the year 1912.

The Brick Sewers and Pipe Sewers will be considered separate contracts.

Cash or certified check for \$250 must accompany each bid as a guarantee of good faith.

The successful bidder will be required to give bond as called for in the specifications.

Plans and specifications may be seen by applying at this office on or after April 9.

The right is reserved to reject any or all bids.

NISBET WINGFIELD,  
City Engr. and Comr. Pub. Wks.

## Sewerage System and Water-works

Sylvester, Ga., April 13, 1912.

Sealed proposals will be received by the Mayor and Council of Sylvester, Georgia, for the construction of a partial sewerage system and water-works improvements, until 5 P. M. May 15, 1912, at which time they are to be publicly opened and read.

Water-works improvements consist of—  
1 Compound Steam Duplex Air Compressor.  
1 Westinghouse Direct-Acting Compressor.  
Brick Pumproom additions.

Furnishing and laying 4650' 6" C. I. Pipe, with Valves, Hydrants and special fittings.

Sewerage system embraces approximately three miles, sizes ranging from 8" to 12", with one Septic Tank.

Work will be let as a whole to one contractor.

Bids will be received for sewerage system and water-works improvements separately and for both.

Certified check required for 5 per cent. of amount of bid.

Plans and specifications may be seen at either the office of the City Clerk or the Engineers.

The right is reserved to reject any or all bids or to accept any bid that may be to the best interest of the city.

A. H. PINSON, Mayor.  
R. B. POLLARD, City Clerk.  
THE J. B. McCARY CO., Engineers,  
Atlanta, Ga.

## Proposals for Betterment of Water-Works and Construction of Electric-Light Plant

Baxley, Ga., April 11, 1912.

Bids will be received by the City Council of the City of Baxley, Ga., until 11 A. M. May 3, 1912, for furnishing: 900 feet and 1100 feet of 8 and 6-inch cast-iron pipe and fittings; for constructing reservoir; for furnishing one boiler; for furnishing feed-water heater; for furnishing one triplex and one boiler-feed pump; for furnishing one air compressor; for installing machinery, complete, including switchboard; for furnishing and installing electric line work; for furnishing poles; for furnishing generator, exciter, switchboard, series transformer and transformers; for furnishing engine, and for erection of power-house.

Specifications may be obtained from and plans seen at the office of the Consulting Engineer. Each bid must be accompanied by a certified check for five (5) per cent. of the total of bids.

The right is reserved to reject any or all bids.

WADE H. WATSON, Mayor.  
H. J. PARKER, Clerk.  
WM. W. LYON, Consulting Engineer,  
305 Duval Bldg., Jacksonville, Fla.

## MISCELLANEOUS

## Pumping Equipment

The City of Paris (Texas) has finished one well, total depth 1175', first 1105' is 8", remainder is 6" from base of 8" pipe to bottom of well; water stands 30' below surface of ground, and has been tested with a second-hand compressor to about 250,000 gallons in 24 hours. A second well will be complete 100' distance from present one, presumably of same depth and dimensions.

Propositions, including prices, will be considered by the City Council at 7.30 o'clock April 9, 1912, for pumping the two wells above referred to. The present plant will furnish ample boiler and steam power. Nothing will be needed but pumping equipment for the two wells above mentioned.

ED H. MCGUISTON,  
Mayor.

## Construction of Drainage Canal

Sealed proposals will be received at the office of the Board of Drainage Commissioners of Muddy Creek Drainage District, Kenansville, N. C., until 12 o'clock M. April 30, 1912, for the construction of a drainage canal in Muddy Creek Drainage District, near Chingquapin, N. C., Duplin county.

Each proposal must be accompanied by a certified check of the bidder for 5 per cent. of the contract price, drawn to the order of the Chairman of the Drainage Commissioners, and which will be forfeited to the Drainage Commissioners of Muddy Creek Drainage District as liquidated damages in case an award is made and the contract and bond is not promptly and properly executed. Checks of unsuccessful bidders will be returned to them immediately after awarding contract.

Specifications and blank forms of proposal will be furnished upon application.

A full set of plans and profiles on file at the office of the Commissioners and at the office of the Engineer to the Commissioners at Wilmington, N. C.

Length of canal, 9.54 miles.  
Approximate yardage, 240,000 cubic yards.  
The right to reject any or all bids is hereby reserved.

G. B. D. PARKER,  
Chairman Board of Commissioners,  
Chingquapin, N. C.  
J. L. BECTON, Engineer,  
Wilmington, N. C.

## Power Equipment

Yazoo City, Miss.

Sealed proposals for furnishing certain machinery and apparatus, including steam turbine driven alternating-current units, exciter units, railway converters, motor generator sets, switchboard panels, condensers and other accessory apparatus, will be received by the Public Service Commission of Yazoo City, Mississippi, until 3 o'clock P. M. on the 27th day of April, 1912, and then publicly opened for consideration.

Specifications and information may be obtained by application to the office of the Commission at Yazoo City, Mississippi. The right is reserved to reject any and all bids.

## Legal Notice

TWENTY-FOUR MILLION GALLON FILTER PLANT—SETTLING BASINS—PIPING—PUMPING STATION—LOW SERVICE PUMPING MACHINERY—WATER TUBE BOILERS—STOKERS—SUPERHEATERS.

Erie, Pennsylvania.

April 9, 1912.

Sealed proposals for the construction of a Filter Plant, Settling Basins, Piping, Congruent House and Superstructure, Pumping Station, Low Service Pumping Machinery, Water Tube Boilers, Stokers and Superheaters, addressed to the Commissioners of Water-works, in the City of Erie, will be received at the Water-works office, City Hall, Erie, Pennsylvania, until 2 o'clock P. M. on the 17th day of May, 1912, and will be then opened and publicly read.

All bids shall be made upon the blank forms contained in the pamphlet with instructions to bidders, contract, specifications, etc., to be obtained on and after the 20th day of April, 1912, at the office of the Commissioners, City Hall, Erie, Pennsylvania, or from the Engineers, Chester & Fleming, Union Bank Building, Pittsburgh, Pennsylvania.

Intending bidders, upon deposit of \$10 for each item on which they desire to bid, will be entitled to two copies of proposal blank, specifications, etc., and one set of plans for item on which deposit is made. Proper receipt for each such deposit will be given, and the money will be refunded upon the return, within ten days after award, of plans and specifications, or in case one copy of pamphlet is used for bidding, the other will become the property of the bidder.

Each proposal shall be accompanied by a certified check for three per cent. (3%) of the total amount of the bid; said check to be made payable to the Secretary of the Commissioners of Water-works in the City of Erie, and to be conditioned that if bid is accepted, contract will be entered into and the performance of same secured within ten days after notification of acceptance of the bid. In case bid is rejected, or contract entered into, check will be returned.

The Commissioners reserve to themselves the right to accept or select such bids as they may deem for the best interests of the city of Erie.

COMMISSIONERS OF WATER-WORKS  
IN THE CITY OF ERIE, PENNA.  
GEORGE C. GENSHEIMER,  
Secretary.

CHESTER & FLEMING, Engineers,  
Union Bank Building,  
Pittsburgh, Pa.

## Be Sure to Read

THIRTY YEARS

OF

## SOUTHERN UPBUILDING

Published as Part II of  
February 22 issue of  
Manufacturers Record.

A wonderful story of  
the South's progress  
and prospects. Be sure  
of getting a copy by  
ordering it now.

50c. per copy in paper.

Cloth \$1.25. Leather \$3.00.

## Mining Machinery FOR SALE

- 1 Norwalk Air Compressor, complete; 24" intake air cylinder, 22" steam cylinder, 24" stroke.
- 15 Harrison Coal Mining Machines.
- 1 Williams Crusher.
- 1 75 H. P. Engine.
- 1 100 H. P. Return Tubular Boiler.
- 1 8000-gallon Cypress Tank.
- 1 Centrifugal Pump.
- 1 American Concentrator, 2-jig washer, conveying and elevating machinery, belting, chains, rope, etc.; capacity about 300 tons.
- 1 10x16 Baldwin Saddle-Tank Locomotive.
- 1 12x16 Vulcan Saddle-Tank Locomotive.
- 1 8x5x10 Manistee Pump.
- 2 6x4x10 Herron Pumps.
- 4 4x3x4 Herron Pumps.
- 1 Fairbanks Railroad Track Scale (200,000-lb. capacity).
- 1 Mine Scale.

Address  
C. HICKS, General Manager  
LOOKOUT FUEL CO., MENTONE, ALA.

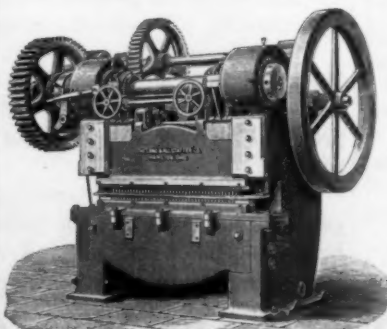
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### Regular

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Long & Allstatter Co., The.	\$5
Lookout Fuel Co.....	\$5
Rawling & Harnischfeger Co.	\$6



MULTIPLE PUNCH

## Power Punches

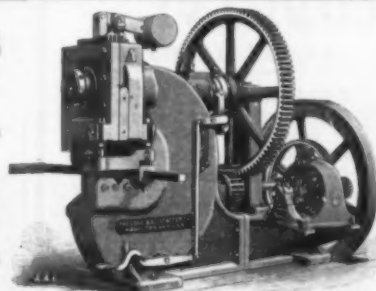
Single, Double, Vertical, Horizontal  
Belt, Steam, Electrically Driven  
for any number of holes

## Power Shears

For Bars, Plates, Beams, Angles  
Channels, and Special Shapes

Write for Catalogue

The Long & Allstatter Co., Hamilton, Ohio



BAR IRON SHEAR



## Special Advertisements of General Interest.

### Great Investment Opportunities

WE ARE THOROUGHLY FAMILIAR with the finest investment territory in the South today, where Coal and Timber Lands can now be bought at prices which will yield to the investor and speculator large profits in the near future.

The past decade has done much for the development of the South; the next decade will do vastly more.

The drift of capital is Southward, and a quarter of a century hence the industrial center of the country will have shifted to this section.

Invest now in Southern Coal and Timber Lands, and in due season reap the golden harvest which is sure to come with the further development of that section.

Our president, Mr. B. M. Yeager, has given years of study and investigation to this section and is familiar with every phase of the situation.

If you are interested in Southern Investments, write us.

**SOUTHERN REALTY CO.**

BOX 281,

MARLINTON, W. VA.

#### FOR SALE

**Very Complete Lumber Operation**  
Saw Mill, Railroad, etc. 50 to 60 million feet, mostly Oak. Will sell very reasonable to quick buyer. Address  
L. M. SCHWARZ,  
86 Charles St., N. S. Pittsburgh, Pa

#### FACTORY SITES FARM LANDS

**Business Opportunities, Timber Lands,  
Realty Investments**

We will take pleasure in submitting information pertaining to either of the above departments.

**S. L. NUSBAUM & CO.**

600 Citizens' Bank Bldg. Norfolk, Va.

#### STAMP MILL FOR SALE

Two batteries, 10-head, 850-pound, good as new, all framing included; 2 Challenge feeders; 8x14 Dodge crusher; 5x7 two-cylinder link-motion hoisting engine with wire rope; 25 H. P. Erie City locomotive boiler. Fine prospecting outfit at big sacrifice. Details other mining machinery bargains on request.  
LOCK BOX NO. 374, Salisbury, N. C.

#### Complete Saw Mill Plant, Dry Kiln and Logging Equipment

FOR SALE  
Mill has a daily capacity of 25,000 feet. Logging outfit consists of Locomotive, three and one-half miles of tramroad and six log trucks. Eighteen to twenty million feet of choice Pine timber, well blocked. Mill located about 35 miles south of Savannah, on the Seaboard Air Line Railway. Fifteen to twenty million feet additional timber can be had in easy reach of this plant. For full particulars address  
ALBERT FENDIG & CO., Brunswick, Ga.

### ASSETS REALIZATION COMPANY

Capital \$10,000,000

Will loan on security requiring special investigation or close supervision, and not available for bank loans. Large enterprises financed. Prompt investigation of security offered, whatever its character or location.

Correspondence Invited

NEW YORK PHILADELPHIA  
25 Broad St. Lafayette Bldg.  
CHICAGO  
First National Bank Building

### Chartered Railroad

#### FOR SALE

Bering Kiam & Southern Railroad, 16 miles long, connecting with Houston, East and West Texas at Bering, Texas. For full particulars write

**BERING MFG. CO.**  
HOUSTON, TEXAS

### Receiver's Sale

**Enid, Ochiltree & Western  
Railroad**

13 1/4 miles track from Dalhart in easterly direction to Wilco, Tex.; built of 60-lb. Illinois Steel Co. new steel, section 6015 and heart ties.

34 miles grade from Dalhart to Dumas, Tex.

112 miles right of way from Dalhart to Ochiltree, Tex.; one-half interest in nine townships of 640 acres each.

34 acres land in Dalhart for terminal grounds.

2 railroad motor cars.

2 push cars and one handcar.

Complete lot of section tools.

Office furniture and household goods.

Set civil engineering instruments.

Complete set of drawings.

One Cadillac automobile.

Two horses and Studebaker mountain hack.

About six complete sets of switch furniture.

Upset price, \$31,000. Bidders required to deposit \$2500.

For further particulars address

**H. G. HENDRICKS, Receiver**  
Amarillo, Texas

### J. T. KIMBROUGH WE LOCATE MANUFACTURERS REAL ESTATE

409-10 Atlanta National Bank Bldg.

ATLANTA, GA.

### Manufacturing Plant

AT

### Bankrupt Sale

On Friday, April 26, 1912, at 2 P. M., I will sell at public sale on the premises the entire plant of Norrish, Burnham & Co., in the Borough of Glen Rock, York County, Pennsylvania, fronting on the Northern Central Railway 385 ft., and having a depth of about 192 ft. This property has erected upon it a large foundry and machine shop, boiler-room, pattern shops, cupola, office, storage and stock rooms, scales, coal sheds and bins. There is also a siding on the property connected with the Northern Central Railway. This property is fully equipped for the foundry and machinery business. The company owns patterns for the manufacture of dough mixers and turbine water wheels, which will be sold with the plant.

Any further information will be given upon application to the undersigned Trustee, residing at York, Pennsylvania.

Terms at sale by

**GEORGE E. NEFF,**  
Trustee in Bankruptcy of  
Norrish, Burnham & Company

### BRICK MANUFACTURING PLANT FOR SALE

All, or the controlling interest in the combined Brick properties in Louisville, Ky., which control 80% of the business.

The Company owns in fee simple, its Hydraulic Pressed Brick Machine. Has a capacity of sixty millions per annum; own its railway cars and an inexhaustible supply of clay and shale. The present owners have grown old and rich in the business and want to retire.

There is a building boom on in Louisville just now, and a competent brick man can for himself and associates secure one of the best going businesses ever offered. Reasonable terms can be made by making prompt inquiry. For further particulars, address

**WALTER S. ADAMS CO., Inc.**  
307 Paul Jones Bldg. Louisville, Ky.

### Cotton Mill

FOR SALE

Three-story Cotton Mill, 40x100 and wings, about 25,000 square feet of floor space, size of lot 100x200. Also all of the spinning machinery.

Kilson Lappers and Finishers, Automatic Waste Cleaners; Atherton, Saco and Pettes Cards; Card Grinders, Collers, Woonsocket Slubbers and Speeders, Fales and Jenks Spinning and Twisting Frames, Draper Upright Spoolers and Dend Warpers. Shafting and Belting and Hymidifying System. Must be sold.

**SCHAEDEWALD MILLS,**  
3d and Huntingdon Sts., Philadelphia, Pa.

### BRICK WORKS

FOR SALE

Brick Works, formerly owned by the Parkersburg Brick Company.

Capacity, 25,000 bricks per day.

Ten round brick kilns. Type, down draft. Capacity, 570,000. Can be enlarged to suit needs of purchaser.

Modern machinery equipment, made by E. M. Freese & Company.

Heavy local demand for brick.

Natural gas available at eight cents per thousand cubic feet.

Very large supply of finest clay, also finest shale suitable for roof tile and paving brick—same quality shale used by United States Roofing Tile Company. The latter property joining the property here offered.

Works located near main line Baltimore & Ohio Railway, and about one mile from Ohio River.

A splendid opportunity for large company to engage in manufacture of paving or building brick or roofing tile.

Property will be sold on liberal terms, and is exceptional opportunity for right party. Address or call on

**JAMES A. WADE, Agent,**

Parkersburg, W. Va.

### COTTON YARN MILL FOR SALE

7070 spindles, well balanced, complete equipment, modern machinery. Stone buildings, operatives' houses. Address

"YARNS,"

Care Manufacturers Record.

### BRICK PLANT IN CENTRAL FLORIDA FOR SALE

Now operating to full capacity. Inexhaustible clay deposit. Good-paying investment, but present owner has good reasons for wishing to sell. Address

"BRICK PLANT,"

Care Manufacturers Record.

### FOR SALE—A new 10-Ton LOCOMOTIVE CRANE

arranged for grab bucket or hook service. Full particulars and price on request. Built by  
**PAWLING & HARNISCHFEGGER CO.,**  
Milwaukee, Wisconsin.

## Bargains in Machinery and Supplies.

### FOR SALE—CHEAP Gas Producer Plant

1—115 H. P. 4-cylinder Bruce-Macbeth Producer Gas Engine. 1—125 H. P. Wile Producer. Complete in detail. Used a short time only. Absolutely good as new. Price for the outfit \$2000 f. o. b. cars Chicago.

PFANNMUELLER ENGINEERING CO.  
3701-3-5-7 S. Ashland Ave., Chicago.

### Rebuilt Engines and Boilers

**Engines—Corliss.**—18x42 Lane & Bodley, 18x36 Ohio Heavy Duty, 16x42 Allis, 12x30 Lane & Bodley.

**Engines—Automatic.**—14x24 Buckeye, 11x16x12 Buffalo Compound, 13x15x15 Taylor, 13x16 Atlas, 13x12 Harrisburg Ideal, 13x12 Phoenix, 12x14 Green, 12x12 Armstrong & Sims, 11x16 Atlas, 10x12 Valley, 8x14 Noyes.

**Engines—Throttling.**—18x24 Atlas, 14x18 Sinker-Davis, 14x14 Lewis Vertical, 12x16 Reed, 12x14 Brownell, 10x16 Bass, 10x12 Atlas, 9x14 Lane & Bodley, 8x10 Erie, 6x8 Industrial.

**Boilers—Stationary.**—12x18, 60x16 High-Pressure, 72x18 Standard, 72x16, 60x18, 60x16, 60x14, 48x14, 48x12, 42x12, 36x16, etc.

**Boilers—Fire Box.**—100, 80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 H. P., etc.

**Boilers—Vertical.**—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 2 H. P., etc.

**Heaters.**—All sizes. Open and Closed.

**Pumps.**—All sizes. Single and Duplex.

**Electrical.**—30 K. W. Generator, direct connected to 8x10 Skinner Engine; 20 K. W. Generator, direct connected to 8x10 Economic Engine; 18 K. W. Belted Generator.

**Miscellaneous.**—Sawmills, Lath Mills, Edgers, Cut-off Saws, Re-Saws, Blowers, Exhaust Fans, Tanks, etc. Write for list. Also full assortment of new machinery.

Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps. Send for circular.

THE RANDLE MACHINERY CO.  
1734 Powers Street. CINCINNATI, OHIO

### AT YOUR PRICE BEFORE REMOVAL

20x42 R. H. Harris Corliss, 14" wheel.  
18x42 R. H. Allis Corliss, 16" wheel.  
15x42 L. H. Allis Corliss, 16" wheel.  
18x24 L. H. Allis Automatic.  
20x24 L. H. Green Automatic.

First Class. Immediate shipment.  
PITTSBURGH MACHINERY & EQUIPMENT CO.  
Fulton Building, Pittsburgh, Pa.

### FOR SALE CHEAP

Four 100 H. P. Portable Return Flue Boilers, 12"x15" Erie City Engine, 12"x16" Birmingham Engine, 15"x22" H. S. & G. Engine, R. Hand Knife Grinder, 10" Outside Molder.

Tampa Machinery Exchange, Tampa, Fla.

### MACHINERY OF ALL KINDS

4 78x20 Horizontal Tubular Boilers, 110 lbs. pressure.  
12 72x20 Horizontal Tubular Boilers, 100 lbs. pressure.

1 35 H. P. Economic Fire Box Boiler, 95 lbs. pressure.  
1 90x16 175 H. P. Internally Fired Marine Boiler, 95 lbs. pressure.

2 14x12 Fraser & Chalmers Corliss Engines.  
1 16x16 Ball Automatic Engine.  
1 10x16 Skinner Automatic Engine.

1 9x12 Ideal Automatic Engine.  
1 18x10 Blaisdell Lathe.  
1 14-ton Kelly Springfield Steam Road Roller.

1 10-ton Standard Gauge Industrial Locomotive Crane, length of boom 35'.  
1 16x10x10 Worthington Duplex Pump.

1 14x14x12 Canton & Hughes Duplex Pump.  
20 8000-gallon Oil Storage Tanks.  
40 6000-gallon Oil Storage Tanks.

3 36x9 Oil Storage Tanks.  
1 66x7 High Pressure Tank.  
1 66x12 High Pressure Tank.

1 66x16 High Pressure Tank.  
1 3-ton Otis Electric Elevator, all complete.  
1 250 H. P. three-phase 60-cycle 440-volt General Electric Alternating Current Motor.

2 8x10 Double Cylinder Crane Elevator Hoists.  
1 7x10 Double Cylinder Single Drum Lidgerwood Hoist.

1 12x15 Lidgerwood Double Cylinder Double Drum Link Motion Hoist.

Write for our Machinery Bulletin No. 229, quoting special prices on everything we have to offer in first-class second-hand Machinery, fully guaranteed.

Chicago House Wrecking Company  
35th and Iron Sts., Chicago, Illinois

### PLANT FOR SALE

At Cambridge City, Ind., on the Pan Handle Railroad  
2 70-ton Bucyrus Steam Shovels.  
6 H. K. Porter Locomotives, 9x14, 3-ft. gauge.

1 H. K. Porter Locomotive, 10x16, 3-ft. gauge.  
1 Baldwin Locomotive, 9x14, 3 ft. gauge.  
2 3-yd. Ryan & McDonald one-way Dump Cars, 3-ft. gauge.

54 4-yd. Ryan & McDonald one-way Dump Cars, 3-ft. gauge.  
11 Frogs and Switches, 60-lb. Rail.

1 1/2-yd. McKelvey Concrete Mixer.  
3 1/2-yd. McKelvey Concrete Mixers.  
2 Guy Derricks, 74-ft. mast, 65-ft. boom, with bull wheels, guy wires, etc.

1 Small Stiff-Leg Derrick.  
1 Large Stiff-Leg Derrick with bull wheel.  
6 Guy Derricks, 60-ft. mast, 55-ft. boom, with bull wheels, guy wires, etc.

1 Guy Derrick, 60-ft. mast, 55-ft. boom, with bull wheels, guy wires, etc.  
1 3-drum Lambert Hoisting Engine, 7x10 (double engines).

2 Double Drum Mundy Hoisting Engines, 6x10 (double engines).  
2 Double Drum Mundy Hoisting Engines, 6x12 (double engines).

(With boilers and hoisting cables.)  
2 Double Drum Lambert Skeleton Engines, 6x10.

5 Dake Swinging Engines.  
1 Mundy Swinging Engine.  
1 40 H. P. Portable Locomotive Boiler.

6 Vertical Boilers. 3 Edison Pumps.  
3 Small Horizontal Steam Pumps.  
1 No. 6 Morris Centrifugal Pump.

1 No. 5 Morris Centrifugal Pump.  
1 Ideal Concrete Buckets.  
3 Eclipse Concrete Buckets.

16 Side Dumping Buckets.  
1 Double Lane Owen Clamshell Bucket, 1 cu. yd. capacity.

P. F. BRENDLINGER, Contractor  
1009 Arcade Building PHILADELPHIA

### PUMPS FOR SALE

One Davidson Single Compound Condensing Pump, capacity 1,000,000 gallons in 24 hours.  
High-pressure steam cylinder, 16" diameter.

Length of stroke, 24".  
Water cylinder, 13 1/2"x24".  
Steam pressure, 50 to 125 lbs.

Pump in first-class operating condition. Complete, with lubricators, oilers, etc. Can be seen in operation until May 20, 1912.

One Deane Duplex Pump, 3x2x3.  
One Knowles Duplex Pump, 3x2x3.  
(A 2,500,000-gallon pump replacing present pump.)

WATER DEPARTMENT,  
North Attleboro, Mass.

### 100 K. W. 250 Volt Westinghouse Belted Generator

Six-pole, compound wound, direct current, type M, speed 550 R. P. M., with base pulley and field rheostat. Condition like new. Guaranteed. Price \$750.00 cash. Send for list of other Bargains.

MILLER-OWEN ELECTRIC CO.,  
217-219 First Ave., Pittsburgh, Pa.

### 15 H. P. 3-Phase 60-Cycle 220 Volt Westinghouse Motor

Slip-ring, type F, speed 900-450. Has rails, pulley starter and controller for varying speed. Slightly used. Guaranteed. Price \$200.00 cash. Send for list of other Bargains.

MILLER-OWEN ELECTRIC CO.,  
217-219 First Ave., Pittsburgh, Pa.

### DYNAMOS and MOTORS SPECIAL BARGAINS

Practically new, 200 K.W., 125 volt, 6-pole, Burke Dynamo, 480 R.P.M., \$825.00.

150 H.P., 250 volt, type "M.P.", 6-pole, C. & C., Shunt Wound Motor, 350 R.P.M., \$675.00.

100 K.W., 6-pole, 250 volt Crocker-Wheeler Dynamo, 650 R.P.M., \$640.00.

100 H.P., 2-phase, 60-cycle, Westinghouse, type "C," Induction Motor, 1120 R.P.M., \$450.00.

300 Dynamos and Motors in all sizes, thoroughly overhauled and guaranteed.

We buy, sell and rent.

E. LEVENE & CO.  
124 N. Third St Philadelphia

### FOR SALE OR RENT

1 20-ton Little Giant Special High Crane Traction Steam Shovel. 1 26-ton Little Giant Traction Steam Shovel. 1 No. 0 Thew Traction Steam Shovel. 1 No. 1 Thew Traction Steam Shovel. 2 10x16" Porter 35" S. T. Locomotives. 2 10x16" Baldwin 5-driver S. T. Locomotives. 1 13x22" Baldwin 5-driver S. T. Locomotive. 2 10-ton 2-wheel New York Steam Rollers. 1 3-ton Tandem Universal Puddle Roller. 1 2 1/2-ton Tandem Ironquois Asphalt Roller. 7 Steel Guy Derricks, 70' masts. 2 2-yd. Hayward Orangepeel Buckets. 1 2-yd. Hayward Clamshell Bucket. 1 1 1/2-yd. Hayward Clamshell Bucket. 5 Lambert D. Boom Swing Electric Hoists, 40 and 60 H. P. D. C., 220 volts. 40 Hoisting Engines. Lidgerwood, Mundy and Lambert, skeleton, mounted, with and without boom swings, from 6 to 100 H. P. Air Compressors, Pumps, Boilers, Engines, Rock Crushers, etc. Get our price on new derricks before purchasing.

HENRY A. HITNER'S SONS CO.,  
Philadelphia, Pa.

### CORLISS ENGINES

1 18x36 Bates.  
1 16x42 Allis.  
1 16x42 Brown.  
1 18x42 Lane & Bodley.  
1 20x48 Wetherill.  
1 22x48 Hamilton.  
1 24x42 Atlas.  
1 22x48 Allis.  
1 28x54 Hamilton.

Automatic Engines of all sizes.  
1 40-ton Corliss Engine Type De La Vergne Ice Machine.  
1 60-ton Corliss Engine Type De La Vergne Ice Machine.

1 lot Brewery Tanks.  
Woodworking Machinery of all kinds.  
Belting, Shafting, Pulleys and Hangers.

CLEVELAND BELTING & MACHY. CO.,  
Cleveland, Ohio.

### Maximum Value Minimum Price

Buy a rebuilt car of standard make from a reputable concern, and you will be thoroughly satisfied with your purchase.

We have been in business since 1902. Our satisfied customers are our salesmen.

1910 Peerless Seven-Passenger Touring Car .....\$2000.00  
1909 Peerless Five-Passenger Touring Car ..... 1500.00

1910 Chalmers "Thirty" Roadster ..... 850.00  
1910 Chalmers "Thirty" Touring Car ..... 850.00  
1910 Chalmers "Thirty" Pony Tonneau ..... 850.00

Full specifications and descriptions of any of the above cars, will be mailed upon application.

We also have a limited quantity of other models of Peerless and Chalmers Cars to offer.

Zell Motor Car Company  
11-13-15 E. Mt. Royal Ave.  
BALTIMORE, MD.

### WAGON PLANT EQUIPMENT

We recently purchased the wagon plant of the Hickman-Ebbert Company and are prepared to sell the following at very reasonable prices: 53 Channel Iron Ball-Bearing Lumber Yard Cars. 12 Transfer Cars. 6 Turntables with railing frogs. 1 Improved Fellows Sawing Machine with saws. 1 Patent Wheel Tensioning and Cut-off Machine. 1 Patent Automatic Double Vertical Chisel Hub Mortising Machine. 1 Spoke Tenoning Machine. 1 lot Band Saws, various sizes. 1 lot Shaper Knives, various sizes. 1 Set 2 1/2" Steel Dies. 12 Side Paint Trucks. 1 Hot Blast Heating Apparatus, complete for drykiln; cost \$2250. Each article mentioned is of the best manufacture, has been only slightly used, and is in first-class condition. Address offers and inquiries to

THE UNIVERSAL STENOGRAPHY COMPANY  
Owensboro, Ky.

### MACHINE TOOLS FOR SALE

1 No. 36 48" Niles Car Wheel Borer, having 6" diameter spindle, 18" traverse, 4 speeds, driven by bevel gearing, back geared, 4-step cone pulley.

1 Bement-Niles Double-End Axle Lathe, center driven, triple geared, complete with driving dogs.

1 No. 2-A Owens Plain Milling Machine, vertical, transverse and longitudinal feeds, 10" Universal dividing head.

All of the above machinery in good working condition. Full particulars by writing

THE MILLER-SANDY MACHINERY CO.,  
Kansas City, Mo.

### WE BUY

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### Machine Shops

and all kinds of

### Industrial Plants

We are always in the market to buy

### Scrap Iron and Steel

OF EVERY KIND

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### Boilers, Engines, Pumps

Hoisting Engines

Every Size and Every Duty

Immediate Shipment  
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### Electric Machinery

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One 120-kilowatt A. C. 440-volt Westinghouse Generator, belted to 16x42 Allis-Corliss Engine, complete with exciter, switch-board and all fittings.

One 20-kilowatt D. C. 230-volt C. & C. Electric Co. Generator, direct connected to 8x10 Allfree Engine.

M. R., Box 2, Station A, Cincinnati, Ohio

For Sale.

### Two Rotary Planers

36-inch heads, modern machines powerful and in good condition.

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One second-hand "BERRYMAN" HEATER AND PURIFIER in perfect condition and guaranteed good as new. Will sell cheap for cash. ADDRESS

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All sizes, any quantity, furnished with new threads and couplings, guaranteed for service.

### PIPE CUT TO SKETCH

CONTRACTORS' EQUIPMENT OF EVERY DESCRIPTION

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## WATER TUBE BOILERS

One 250 H. P. and one 125 H. P. "Heine," good for 150 lbs. pressure, equipped with Treadwell Shaking Grates and usual fittings. Will sell low to avoid cost of moving.

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## WATER-WORKS EQUIPMENT

In Very Good Condition

### FOR SALE

One Fairbanks & Morse Combined Gasoline Engine and Pump, capacity about 14,000 gallons per hour 100 feet high. Two Deep-Well Pumps, one four-inch and one five-inch. One Steel Tower about 70 feet high, and one 40,000-gallon Steel Tank. Reason for sale, gravity system installed. Address

A. L. WARD,  
Chairman Water Committee,  
Mount Pleasant, Tenn.

### FOR SALE

One 26"x14" Lathe. One 20"x10" Lathe. Two 14"x6" Lathes. One 30 H. P. Traction Engine. One No. 2 B. Koehring Cement Mixer. One No. 1 B. Koehring Cement Mixer. One No. 1 Smith Mixer with Boiler and Engine. Two 125 H. P. Hor. Tub. Boilers. Two 110 H. P. Hor. Tub. Boilers. Three Berlin Planers and Matchers, 4"x9".

CHAS. T. LEHMAN, - Birmingham, Ala.

\$1600.00

50 K. W. General Electric 125-volt 6-pole Dynamo, direct connected 3-cylinder vertical gasoline engine, complete, perfect condition, \$1600, f. o. b. New York. Can be changed for gas at about \$100.

### DUZETS & SONS

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## BARGAIN SALE

### Planing Mill and Box Factory Machinery

Consisting in part of 1 complete Sturtevant Hot Air Drykiln, 2 Double Sturtevant Fans, 7 Planers and Matchers, 1 60" Band Resaw, 2 Molding Machines, 1 End Matcher, 2 Boring Machines for flooring, 3 Power Rip Saws, 1 Shaving Press. Also Morgan Machine Co.'s Open Back Nailers, Lock-corner Machines, Setting-up Machines, Trimmer Saws, Rip Saws, Cut-off Saws, Power Matchers, etc. Special bargain on Drykiln.

Address  
"BARGAIN SALE,"  
Care Manufacturers Record, Baltimore, Md.

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I buy, sell, rent and exchange.  
The best and the cheapest.  
Let me know what you have for sale and what you want to buy.

THOMAS YEARSLEY

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## Engines and Generators

Large Stock of Engines and Generators  
Locomotives and Cars

The Dorner Railway Equipment Co.  
Irving Park Blvd., cor. Southport, Chicago.

## SECOND-HAND MACHINERY

### LATHES.

13x5 Seneca Falls, comp. rest, pan.  
14x6 Putnam, C. R., P. C. F.  
14x5 Reed, R. & F.  
15x6 Putnam, chuck and taper.  
16x6 Robbins, compound rest.  
16x6 Reed, C. R., P. C. F. taper.  
16x8 Porter, compound rest.  
18x6 Lodge & Davis, C. R., P. C. F.  
18x8 American, taper chuck.  
18x8 Putnam, R. & F. rest.  
20x8 McMahon, C. R. chuck.  
20x9 Pratt & Whitney, compound rest.  
20x10 Prentiss, C. R., P. C. F.  
20x10 Draper, C. R., P. C. F.  
24x14 Reed, high speed.  
26x12 Pond, C. R. and chuck.  
26x22 New Haven, plain turning.  
27x12 Pratt & Whitney, C. R., P. C. F.  
30x12 Niles, C. R., P. C. F.  
32x12 Johnson, triple geared, C. R.  
32x17 Bement-Miles, C. R., triple geared.  
36x14 and 16 Lodge & Shipley, C. R., P. C. F.  
36x16 Reed, C. R., P. C. F.  
38x14 Pond, Pl. R., P. C. F.  
38x20 Fay & Scott, C. R., P. C. F.  
40x18 Newark, triple geared, C. R., P. C. F.  
46x38 Fitchburg, compound rest, P. C. F.  
64x20 Putnam, C. R., T. G.  
102x35 Bement, compound rest, P. C. F.  
An assortment of speed lathes.

### SCREW MACHINES.

20x8 Bogart, turret on carriage.  
23x7 Pearson, F. B. G., P. F.  
18x6 Fay & Scott, plain turret.  
24x7 Pratt & Whitney, hub former.  
24x7 American, heavy turret.  
24x24 Jones & Lamson, flat turret.  
20x6 Bardons & Oliver, F. B. G.  
No. 2 7/8" Warner & Swasey, wire feed.  
No. 2 1/2" Garvin, wire feed, friction head.  
No. 1 Garvin, wire feed.  
3/4" National Acme, automatic.  
3/4" Pratt & Whitney, screw shaver.  
No. 2 Warner & Swasey, hollow hexagon.  
18x6 Springfield, inv. fox.  
No. 6 Brown & Sharpe, friction head.  
1" Smurr & Kamen, wire feed.  
1/2", 3/4", 1" and 2 1/2" Pratt & Whitney, automatics.  
2 1/2" spindle Gridley, automatic.  
1 1/2"x18" Pratt & Whitney.

### MILLERS.

No. 4 1/2 Becker, small plain.  
No. 2 Le Blonde, plain, back gears.  
No. 2 Pratt & Whitney, Lincoln pattern.  
No. 3 Cincinnati, plain.  
No. 12 Brown & Sharpe, manufacturers'.  
No. 15 Brainerd, small universal.  
Beaman & Smith, planer type for automobile work.

### DRILLS.

26" Lodge & Davis, B. G. & P. F.  
28" Barnes, B. G. and P. F.

32" Box, half universal, radial.  
No. 25 Foote-Burt, high speed.  
F 12" Baker Bros.  
10-spindle Gardam, multiple.  
7-spindle Slate, bedstead drill.  
4-spindle Foote-Burt, adjustable rail.  
3-spindle Gardam, rail.  
3-spindle Barnes, gang.  
36" Bickford, radial, B. G. & T. A.  
32" Lodge & Davis, sliding head.  
37" Gould & Eberhardt, sliding head.  
24" Hamilton, sliding head.  
2-spindle Rockford, bench sensitive.  
3-spindle Barnes, gang, plain lever.  
24" American, sensitive radial.

### PLANERS.

20x20x4 Pease, 1 head.  
36x36x3 Gleason, 1 head.  
36x36x7 Sellers, 1 head.  
36x36x12 Betts, 4 heads.  
30x30x10 Gleason, 1 head.  
48x48x15 Pond, 3 heads.  
48x42x8 Farrell, 1 head.  
30x30x8 Davis & Egan, 2 heads.

### SHAPERS.

14" Lodge & Davis, plain.  
18" Putnam, friction.  
25" Lodge & Davis, shifting belt.  
30" Hendey, friction.  
30" Gould & Eberhardt, crank.  
17" Juengst, horizontal crank.

### MISCELLANEOUS.

54" Niles, car wheel lathe.  
Boring Mill, 37" Bullard, 2 heads.  
Boring Mill, 10" Pond.  
Boring Mill, 23 1/2" bar, Bement.  
Boring Mill, 48" Colburn.  
Boring Mill, 62" Bullard.  
Boring Mill, 4" bar, Betts, horizontal.  
Grinder, No. 16, Brown & Sharpe, plain.  
Press, No. 4, Mossberg incluable.  
Press, No. 4, Stiles, pattern.  
Press, No. 55, Ferracute, heavy geared.  
Pipe Machine, 4" Curtis & Curtis.  
Boring Mill, 2-sp., Beaman & Smith.  
Grinder, 8" style "C," American twist drill.  
Gear Cutter, 23"x4", Gould & Eber.  
Gear Cutter, 72", Gould & Eberhardt.  
Grinder, Walker, electric surface.  
Gas Engine, No. 18, H. P. Fairbanks.  
Hammer, 25 lbs., Dupont trip.  
Hammer, 60 lbs., Bradley compact.  
Hammer, 200 lbs., American, Steam.  
Hammer, 1000 lbs., Pratt & W., drop.  
Slotter, 12" Betts.  
Grinder, Sellers, universal tool.  
Welding Outfit, Sanford.  
Press, No. 63, Bliss, double acting.  
Grinder, No. 22, Landis, plain.  
Furnace, No. 33, American Gas.  
Saw, No. 5, Cochrane & Bly.  
3 H. P. Motor, 230 volts.  
7 1/2 H. P. Motor, 230 volts, D. C.

## PRENTISS TOOL & SUPPLY CO.

SINGER BUILDING, 149 BROADWAY, NEW YORK

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## FIRE PUMP FOR SALE

Blake 500 gallon Underwriters Fire Pump, was in commission but fifteen months, in excellent condition.

Tennessee Oak Flooring Co., Nashville, Tenn.

In revising our manufacturing equipment we find the following first-class

## Used Machine Tools

which we offer at attractive prices

### ENGINE LATHES

16 in. x 6 ft. Hendey, Q. C. G.  
16 in. x 6 ft. Pratt & Whitney, Q. C. G.  
16 in. x 8 ft. Reed.  
18 in. x 8 ft. Lodge & Shipley, Q. C. G.  
18 in. x 10 ft. Lodge & Shipley, Q. C. G.  
20 in. x 8 ft. Lodge & Shipley, Q. C. G.  
20 in. x 10 ft. Lodge & Shipley, Q. C. G.  
24 in. x 8 ft. Lodge & Shipley, Q. C. G.  
27 in. x 10 ft. Lodge & Shipley, Q. C. G.  
36 in. x 12 ft. Lodge & Shipley, Q. C. G.  
36 in. x 14 ft. New Haven.

### SPECIAL LATHES

24 in. x 7 ft. Lodge & Shipley Chucking Lathe.  
No. 3 Lodge & Shipley Rapid Reduction Lathe.

### METAL SAWS

No. 3 Nutter-Barnes Cold Saw.  
Franklin Cold Saw, 3 1/2 in. capacity.  
Globe Power Hack Saw, 3 in. capacity.

### MISCELLANEOUS MACHINES

Whitton Centering Machine.  
Mumford 12 in. x 40 in. Molding Machine.  
Write for complete description with prices of machines in which you are interested.

THE LODGE & SHIPLEY MACHINE TOOL CO.  
CINCINNATI, OHIO

## Second-hand Electric Motors

We have the largest stock of second-hand electric motors and generators in America, and buy and sell, rent, exchange and repair electrical machinery of all kinds. Send for our "Monthly Bargain Sheet," showing complete stock with net prices. All machines guaranteed in good order.

GREGORY ELECTRIC CO.,  
Sixteenth and Lincoln Sts., Chicago, Ill.

## Bargains in Rebuilt, Boilers, Engines, Locomotives, Etc.

1 25 H. P. Refitted Fire Box Boiler, price \$200.  
1 each 40, 60 and 80 H. P. Refitted Fire Box Boilers, with fittings at a bargain.  
1 each 60, 80 and 100 H. P. Horizontal Tubular Boilers.  
1 each 6, 8 and 10 H. P. Vertical Boilers, complete.  
2 16 H. P. Hoisting Engines, double drums; with boilers.  
1 25 H. P. Hoisting Engine, single drum.  
1 50 H. P. Gas Engine (used four months).  
1 10" dia. Mine Ventilating Fan, with engine.  
1 10-ton "Baldwin" Saddle Tank Locomotive, 44" gauge.  
1 30-ton "Climax" Geared Logging Locomotive, 3" gauge.  
1 each 6, 8 and 10" Electric Mine Ventilating Fans (Thayer Pat.).  
The above must be sold without reference to cost. Write us.  
SOUTH SIDE FOUNDRY & MACH. WKS.,  
Charleston, West Virginia.

## BARGAINS IN STOCK

## Immediate Delivery, Rebuilt and Guaranteed

ENGINES and BOILERS, all types up to 1000 H. P.  
Let me know your wants.

### AIR COMPRESSORS

18"x18 1/2"x24" Ingersoll-Sergeant.  
14"x9"x8 1/2"x12" Ingersoll Two-Stage, "Imperial" type.  
12"x14"x14" Hall, steam driven.  
14"x12" Laidlaw-Dunn, belt driven.  
12"x12"x12" Laidlaw-Dunn, steam driven.  
And many others.

### HEATERS

1000 H. P. Cochrane, late type.  
1000 H. P. Berryman Gleaner.  
800 H. P. Wheeler, New.  
600 H. P. Berryman.  
500 H. P. Berryman.  
400 H. P. Wetherill.

### PUMPS

One (1) 18"x28"x18" Snow Duplex.  
Two (2) 16"x10 1/2"x10" Worthington Duplex.  
One (1) 500-gal. Underwriter's Fire Pump.  
One (1) 750-gal. Underwriter's Fire Pump.  
One (1) 10"x12" Duplex D. A. Smith-Valle Power Pump, 6"x8" Davis Plunger.  
500 H. P. Conover Jet Condenser, complete.  
Vacuum and Condensing Pumps, all sizes.

### MACHINE TOOLS

Large stock of Machine Tools. Note my adv. in last week's issue. Send for Special List. Correspondence solicited.

HERMAN L. WINTERER

908-910 Beach St.

Philadelphia, Pa.

## IN STOCK

Rebuilt and Guaranteed  
for Immediate Delivery

### SPECIAL

1 1000-gallon Blake Underwriters' Fire Pump.  
1 500-gallon Knowles Underwriters' Fire Pump.  
1 1000 H. P. Webster Open Heater.

### BOILERS

2 72"x20' Horizontal Return Tubular, 175 H. P. each, 125 lbs. steam.  
2 66"x18' Horizontal Return Tubular, 125 H. P. each, 120 lbs. steam.  
1 54"x16' Horizontal Return Tubular, 70 H. P., 100 lbs. steam.  
1 150 H. P. Manning Vertical, 125 lbs. steam.  
Large stock of vertical types, all sizes.

### ENGINES

30"x48" Watts-Campbell Corliss.  
26"x60" Corliss. 16"x36" Nordberg.  
24"x54" Brown. 14"x36" Allis.  
22"x42" Greene. 14"x30" Russell.  
20"x42" Greene. 12"x22"x12" Greene.  
20"x42" Buckeye. 12"x24" Wetherill.  
18"x42" Corliss. 9"x24" Cooper.  
Large stock of smaller sizes; also Automatic and Plain Slide Valve, Vertical and Horizontal.

### DIRECT CONNECTED UNITS

1 100 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 1 1/2"x14" Wright Center Crank Automatic Engine, 250 H. P. M.  
1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"-18"x10" Westinghouse Compound Engine, 315 H. P. M.  
PUMPS, HOISTING ENGINES, WESTINGHOUSE ENGINES, GAS AND GASOLINE ENGINES, AIR COMPRESSORS, HEATERS, STONE CRUSHERS, HEATERS, AND GENERAL EQUIPMENT.

### LATHES

42"x18" Pond. 36"x22" Bement.  
36"x16" James Moore Screw Cutting.  
32"x14" Johnson. 24"x10" Fildell.  
32"x12" Fildell. 22"x18" Harrington.  
22"x8" Lodge & Davis.  
21"x7" Pratt & Whitney.  
20"x10" Rahn-Larmon, gap swings 27" gap.  
20"x8" Bullard.  
20"x10" American Patent Head, arranged for motor also.  
19"x8" Gray. 16"x6" Fitchburg.  
18"x7" Ames. 14"x6" Fay & Scott.  
14"x7" Lodge & Shipley, geared head.  
Large stock of smaller sizes.

### SHAPERS

20"x30" Pedrick & Ayer Open Side or Traveling Head.  
26" Gould & Eberhardt, not back geared.  
20" Steptoe, back geared.  
20" Steptoe, crank.  
16" Heavy Duty Traveling Head.  
16" Friction Drive, Hendey.  
14" Steptoe.  
13"x22" Traveling Head.  
6" Boynton & Plummer.

### PLANERS

36"x36"x12" New Haven.  
33"x33"x12" Woodward & Powell.  
33"x33"x12" New Haven, one head.  
30"x30"x10" Standard, one head.  
30"x30"x8" Pease, one head.  
28"x28"x7" New Haven.  
26"x26"x7" Wheeler, one head.  
2 26"x26"x6" Niles.  
22"x22"x6" Powell, two heads.  
14"x14"x34", mounted on iron legs.

### MILLING MACHINES

36"x12" Heavy Duty Slab Milling Machine, very powerfully geared and capable of taking a heavy cut.  
No. 2 Cincinnati Plain.  
No. 2 Van Norman Duplex Milling Machine; tables are 36"x30".  
Pratt & Whitney Duplex Miller, with mill work 27" wide, 6" high and 6' long.  
Garvin No. 1 Hand Miller.  
No. 22 Garvin Vertical.

### HAMMERS

800-lb. Bement, Miles & Co. Single Frame Steam Hammer.  
600-lb. Pratt & Whitney Board Drop Hammer.  
600-lb. Chambersburg Guided Rod.  
100-lb. Little Giant Trip Hammer (new).  
75-lb. Dienelt & Eisenhardt Belt.

### DRILLS

2 4" Gang Radial Drills (plain).  
42" Niles & Jones (plain).  
24" Frontier.  
24" Fitchburg.  
Large stock of 21" and 20", as well as Sensit Drills.

## TURRET LATHES and SCREW MACHINES

28" swing 7' bed Davis Turret Head Boring Lathe, 2 1/2" hollow spindle.  
20" swing Turret Head Davis Boring Lathe, 2" hollow spindle.  
2 26" Garvin Turrets, 8" hollow spindle.  
12" Foster & Kimball Wire Feed Screw Machine.  
17" Foster & Kimball Friction Head Turret.  
No. 2 Garvin Wire Feed Screw Machine.  
No. 3 Pratt & Whitney Screw Machine, 16" swing, 5' 6" bed, spindle capacity 1 1/2-16".  
18"x8" Lodge & Davis Plain Turret Lathe, 1 1/2" hollow spindle.  
1 1/4" Bardons & Oliver Turret Lathe, with cut-off slide rest, 2 chucks, no wire feed.  
Send for latest list, just issued.

## Frank Toomey, Inc.

127-131 North 3rd St.

PHILADELPHIA, PA.

# Railroad and Contractors' Equipment and Supplies.

## FOR SALE PIPE

### Second-Hand

All sizes, 1/8 inch to 24 inches

Furnished with new threads and couplings, suitable for all practical purposes; large stock constantly on hand, together with a general assortment of used contractors' machinery.

### MARINE METAL & SUPPLY CO.

167 South St. NEW YORK

#### FOR SALE

1 complete 600-light Plant, \$350.  
1 complete 1200-light Plant, \$500.  
Large stock of Engines, Pumps, Air Compressors, all in A-1 condition.  
35 H. P. Boilers at \$175.  
Railroad Rails, 16-lb. to 70-lb.  
Pipe from 1" to 12".

TEXAS SUPPLY CO., Beaumont, Texas.

### DIPPER DREDGE

#### FOR SALE

One 3/4-yard Dipper Dredge with boat, operated by oil engine. Nearly new. Good shape. Bargain. Immediate delivery.

### Scott-Madden Iron Works Co.

W. E. Austin Machinery Co., Atlanta, Ga., Southern Representatives.

### Cornice Brake and Pulley Turning Machine

#### FOR SALE

Cheap, 8-foot Power Cornice Brake: only used three months. Also one 20-inch Pulley Turning Machine, practically new.

SHEPHERD ENGINEERING CO.  
WILLIAMSPORT, PA.

### SPIRAL PIPE

#### FOR SALE CHEAP

9000 feet Galvanized Spiral Riveted Flanged Pipe, size 9". Heavy gauge, in first-class serviceable condition, suitable for dredge work, air pressure, etc. Will make very attractive price in quantities.

MARINE METAL & SUPPLY CO.,

167 South Street,  
NEW YORK CITY.

### DIAMOND CORE DRILL

#### FOR SALE

A Sullivan Drill, at 1/2 cost, fully equipped (except carbons) for 1 1/2 and 1 3/4" cores.

JAMES M. HODGE, Big Stone Gap, Va.

### For Sale—Ditching Dredges, &c.

Marion 1-yd. Dredge, used on one job, good order, cheap. Browning 1 1/2-yd. Drag Line Machine, used little, low price. Several Marion Dredges, 1 1/2 to 2-yd. capacity. If in want of machinery for drainage work or reclamation, write us. Address  
THE MALES CO.,  
82 Perin Bldg., Cincinnati, O.

### LOCOMOTIVE CRANE

FOR SALE—One Industrial 8-wheel standard-gauge Locomotive Crane, 10-ton capacity, equally as good as new. Crane equipped for clamshell bucket, self-propelling, 50' steel boom.

HENRY A. HITNER'S SONS COMPANY,  
Philadelphia, Pa.

### BUCYRUS CO.

Steam Shovels, Dredges,  
Drag Line Excavators, Wrecking Cranes,  
Unloading Plows, Loco Pile Drivers.

P. O. Box N. So. Milwaukee, Wis.

#### FOR SALE

One single cylinder gasoline roller, nearly new; price low.

J. M. B. & SONS, care Manufacturers  
Record, Baltimore, Md.

### Hoisting Engine

#### FOR SALE

Two three-drum tandem Lidgerwood Hoisting Engines, size 14x18, D. C., reverse link motion and friction drums, equally as good as new.

HENRY A. HITNER'S SONS CO.  
PHILADELPHIA, PA.

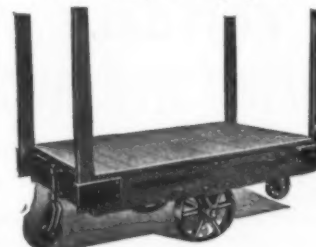
### Equipment Bargains

Flat, Box, Stock, Caboose and Logging Cars; Combination and Passenger Coaches; Rails, Castings, Gearing, etc.; Bogie Wheels for any Gauge of Track; Machinery Repaired, Locomotive, Marine, Stationary, Sawmill, etc.  
15 Locomotives, 26 and standard gauges.  
1 Bucyrus Steam Shovel.  
1 Vulcan Steam Shovel.  
1 Smith Concrete Mixer.  
2 Centrifugal Pumps.  
5 Stationary Engines, different sizes, several Boilers.  
2 Sawmills.  
2 Skidding Machines.  
1 Planer.  
Other Machinery, Logging Cars and Rail. Prompt Dispatch and Moderate Charges.

J. H. MACLEARY, SUFFOLK, VA.

### Roller Bearing CARS AND TRUCKS

of all kinds, for all purposes



Style 50

Switches, Turntables

Complete Industrial Railway Equipment

Write for Catalogue and Prices

The Chase Foundry & Mfg. Co.  
COLUMBUS, OHIO

## List of Surplus Contractors' Overhauled Equipment At Prices That Will Suit Purchaser

- |  | LOCATION.       |
|--|-----------------|
| 1 16 H. P. Port Huron traction engine....  | Newburgh, N. Y. |
| 2 18 H. P. Huber special length contract-<br>or's traction engines, Nos. 9020 and<br>9027, each .....  | Newburgh, N. Y. |
| 1 26 H. P. Huber traction engine No. 8277.   | Pittsburgh, Pa. |
| 6 Port Huron spreading car wagons, each.   | Pittsburgh, Pa. |
| 1 10-ton Oastler steam roller.....   | Pittsburgh, Pa. |
| 1 10-ton Averling-Porter steam roller.....   | Pittsburgh, Pa. |
| 1 3-ton Pioneer roller.....  | Pittsburgh, Pa. |
| 1 600-gal. Studebaker sprinkler wagon,<br>8 1/2 in. tires.....   | Pittsburgh, Pa. |
| 1 Class B Lidgerwood-Crawford excava-<br>tor with 60 ft. boom, 1 1/2 cu. yd. Page<br>scraper bucket, in good working con-<br>dition .....                            | Newburgh, N. Y. |
| 1 Model G Marion steam shovel.....   | Newburgh, N. Y. |
| 1 Improved A Marion steam shovel.....  | Pittsburgh, Pa. |
| 1 18-ton H. P. Porter locomotive, shop<br>2199-36 in. gauge.....   | Branch, Pa.     |
| 2 22 and 13x16 Imperial X-2 belted air<br>compressors, as good as new, with 8<br>in. unloaders for same, complete, at<br>each .....                                  | Elmsford, N. Y. |
| 1 16x10x14 Imperial X-2 belted air com-<br>pressor. Same as above.....   | Elmsford, N. Y. |
| 1 30 H. P. straight line Ingersoll com-<br>pressor, No. 379.....   | Branch, Pa.     |
| 2 1-14-200 H. P., 514 R. P. M., 2200 volts,<br>form M, 3-phase, 60-cycle, G. E. mo-<br>tors, complete with all switchboards<br>and indicating apparatus, at each.... | Elmsford, N. Y. |
| 1 10-100 H. P., 720 R. P. M., form K, 2200<br>volts, 3-phase, 60-cycle, G. E. motor,<br>complete with all switchboards and<br>indicating apparatus.....              | Elmsford, N. Y. |
| 1 40 H. P. Nagel boiler with engine<br>mounted .....   | Pittsburgh, Pa. |
| 1 20 H. P. Porter-Donaldson Economic<br>boiler .....   | Pittsburgh, Pa. |
| 1 50 H. P. horizontal boiler, 4 ft. 6 in.<br>diam., 14 ft. long, 54-2 1/2 in. tubes....  | Pittsburgh, Pa. |
| 1 50 H. P. vertical boiler mounted on<br>trucks, submerged tubes.....  | Pittsburgh, Pa. |
| 1 100 H. P. 60 E. Erie Economic boilers..  | Pittsburgh, Pa. |
| 1 5 H. P. engine.....  | Pittsburgh, Pa. |

- |  | LOCATION.  |
|--|--|
| 1 50 H. P. Porter-Donaldson side-valve<br>engine band wheel, 16 in. face, 16 in.<br>diam. ....   | Pittsburgh, Pa.  |
| 1 40 H. P. Atlas engine, band wheel, 16<br>in. face, 16 in. diam.....  | Pittsburgh, Pa.  |
| 1 10 H. P. Erie engine, 10x16.....   | Pittsburgh, Pa.  |
| 1 10 H. P. vertical engine, Nagel No. 12,711   | Pittsburgh, Pa.  |
| 1 100 H. P. single-cylinder, 13x18 center-<br>crank, high-speed engine, 78x20 1/2 fly-<br>wheel, made at Erie Engine Works,<br>No. 10,404, known as No. 13 C. C..... | Newburgh, N. Y.  |
| 1 Epping-Carpenter No. 6 single-plunger<br>pump, No. 1465, 10x6x12, in good order  | Pittsburgh, Pa.  |
| 1 Wilson-Snyder duplex pump, No. 1806,<br>10x6x15 .....  | Pittsburgh, Pa.  |
| 1 Wilson-Snyder pump, 4x2x7.....   | Pittsburgh, Pa.  |
| 1 Epping-Carpenter pump, 4x6x2.....  | Pittsburgh, Pa.  |
| 1 3x2x3 Blake feed pump.....   | Newburgh, N. Y.  |
| 1 Fairbanks type A reciprocating pump,<br>gasoline .....   | Pittsburgh, Pa.  |
| 1 Fairbanks 3 in. x 2 1/2 in. centrifugal<br>pump, gasoline.....   | Pittsburgh, Pa.  |
| 1 No. 4 B Gates crusher with extra head,<br>shaft, eccentrics.....   | Pittsburgh, Pa.  |
| 1 No. 3 Shorthead McCully gyratory<br>crusher .....  | Newburgh, N. Y.  |
| 1 40 in. x 14 ft. rotary screen, dust jack-<br>ets, 3/4 in. mesh plates, 1 in., 1 1/2 in.,<br>2 1/2 in.....  | Newburgh, N. Y.  |
| 1 No. 6 belt elevator, 66 ft. center to cen-<br>ter, 18 in. buckets.....   | Newburgh, N. Y.  |
| 1 No. 4 Ransome concrete mixer, No. 1900,<br>40 cu. ft. capacity, batch hopper, com-<br>plete with engine.....   | Newburgh, N. Y.  |
| Rock drills, air and steam of all sizes,<br>Ingersoll, Murphy, Dallett, Sullivan<br>and Hardsocg makes.  | Pittsburgh, Pa.<br>Newburgh, N. Y.<br>Elmsford, N. Y.<br>Elizabethton, Tenn. |
| 1 Freese cutting table, practically new<br>(16 cuts).....  | Pittsburgh, Pa.  |
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| 2000 ft. 2 in. screw pipe, at per foot....   | Elmsford, N. Y.  |
| 1 No. 3 Foote continuous concrete mixer,<br>with engine and boiler, mounted.....   | Pittsburgh, Pa.  |

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One 45-ton Standard Gauge, in good  
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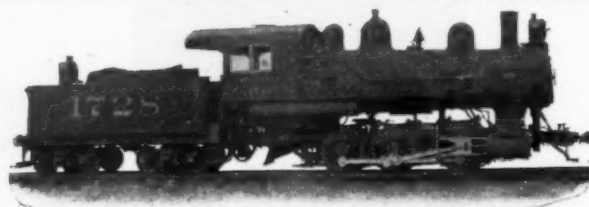
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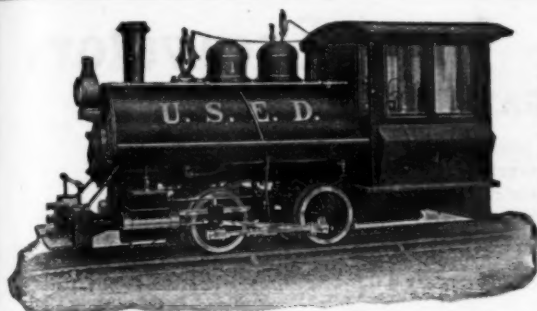
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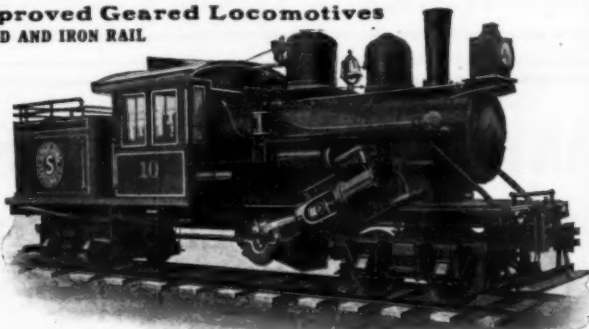


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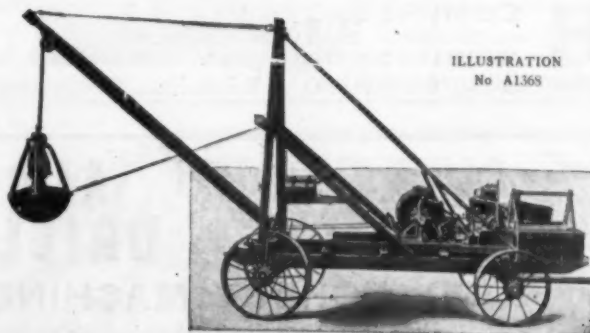


ILLUSTRATION  
No. A1368





## Monighan Drag Line Excavators

### STEAM AND GASOLINE POWER

The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 ft. long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

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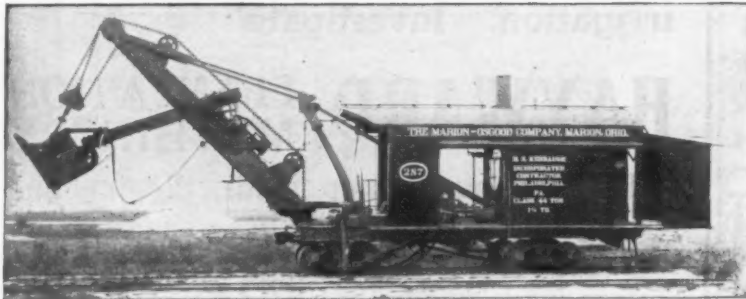
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Specially strong boom  
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Special Dredge and  
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Single Rope Bucket,  
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Adaptable to many other uses than drilling and boring. Built in complete range of sizes and capacities. Sold under liberal guarantee. Write us regarding our new line of ball bearing tools

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We do not know of any mechanical product with a better record or more excellent recommendations than Ingersoll-Rand Rock Drills.

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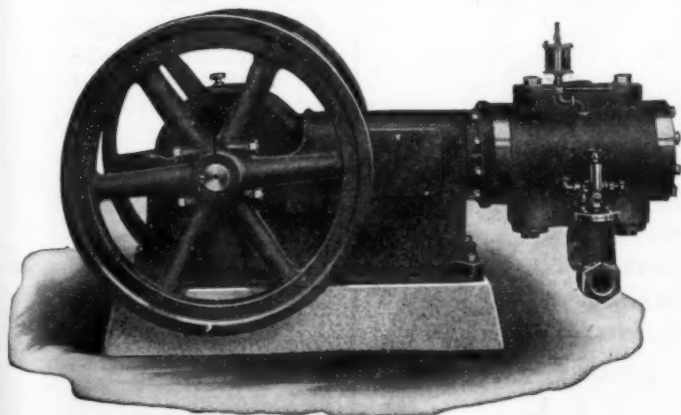
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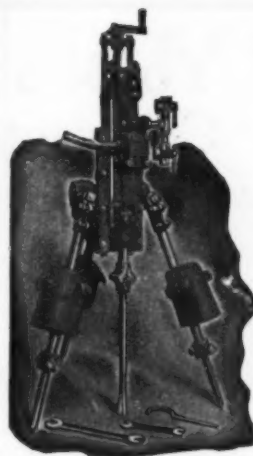
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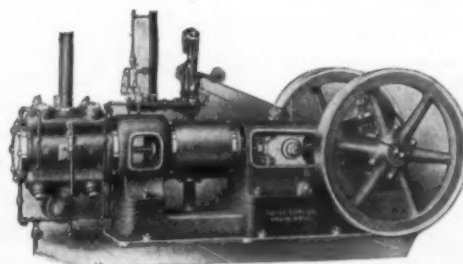
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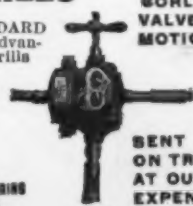
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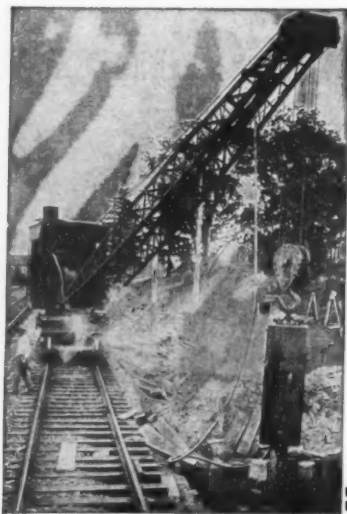
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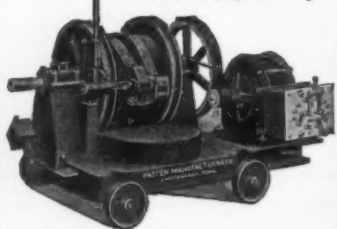
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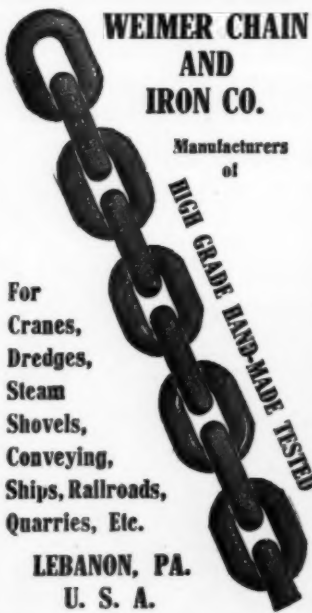
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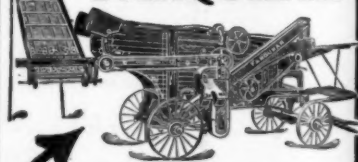
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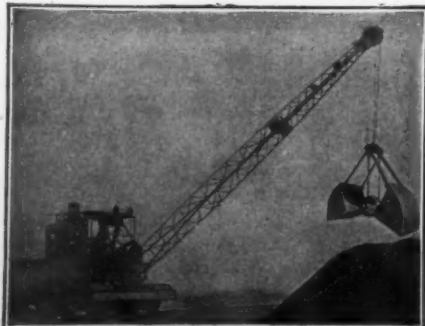


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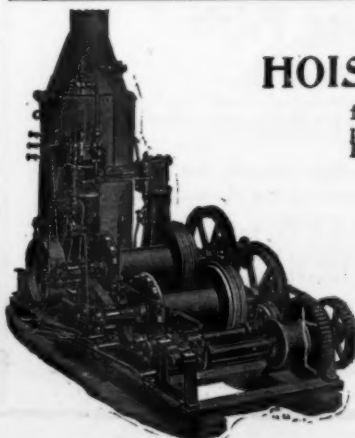
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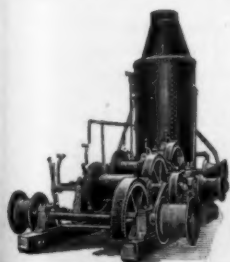
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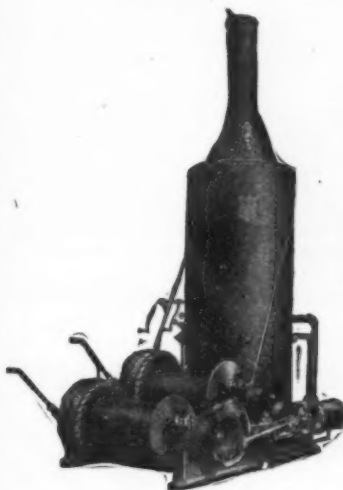
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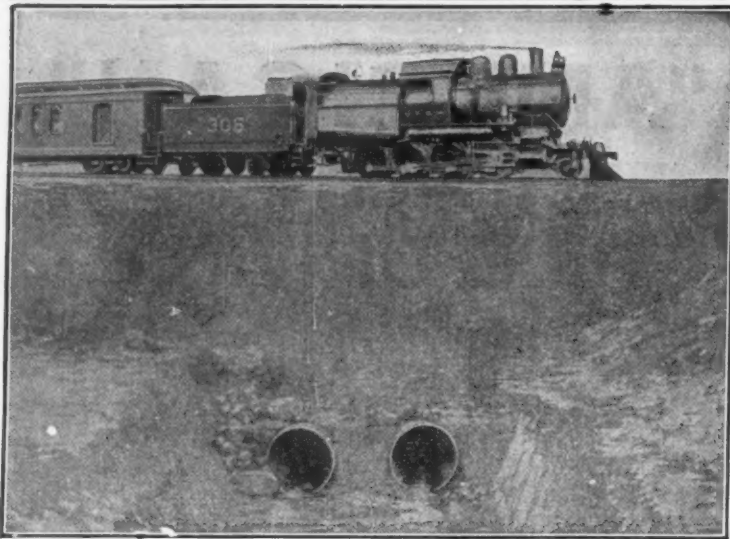
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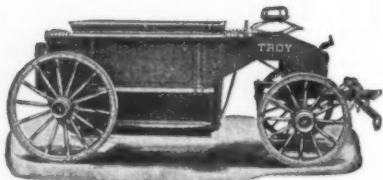
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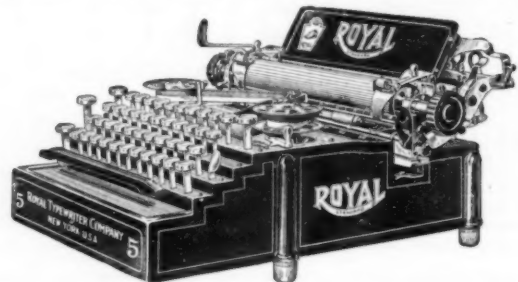
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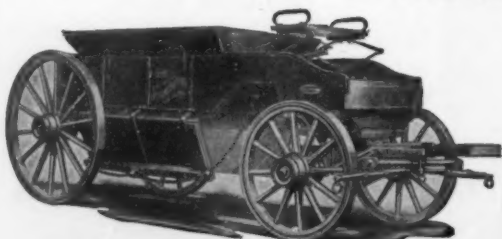
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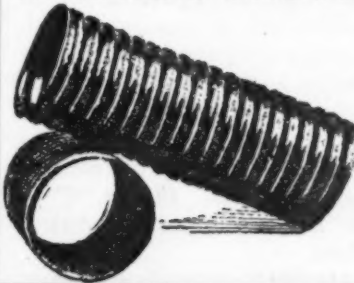
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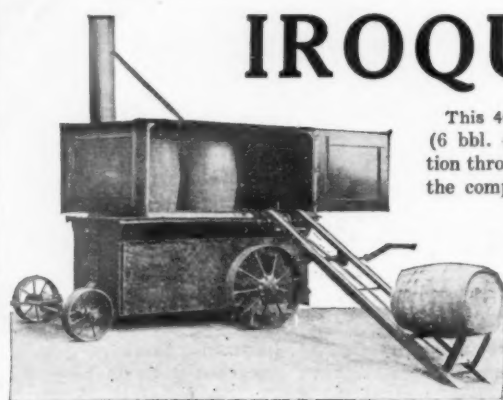
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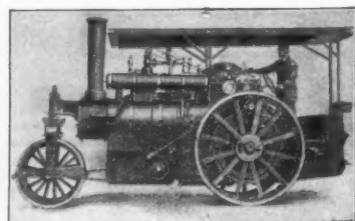
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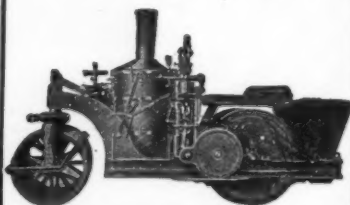
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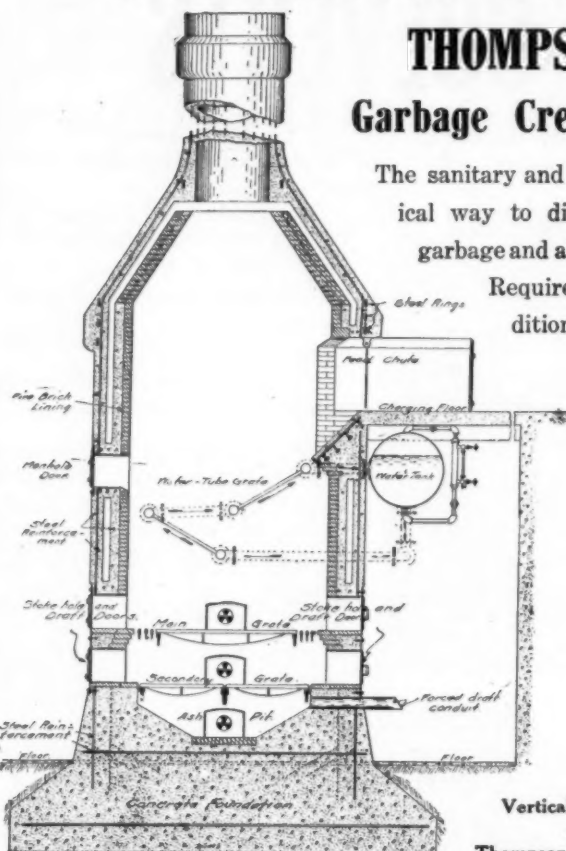
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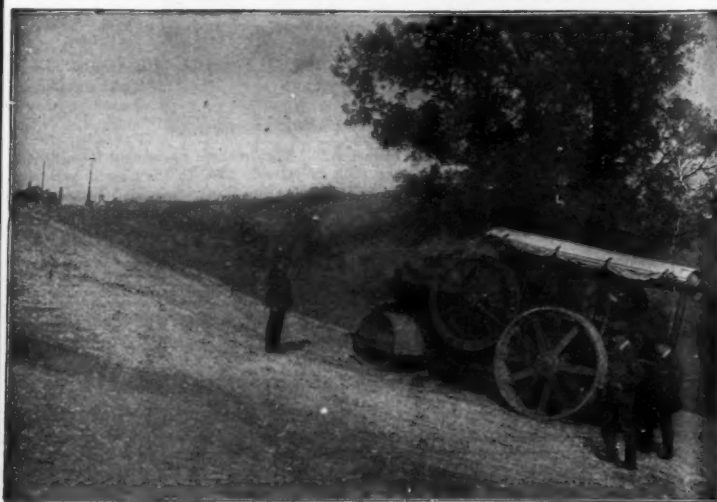
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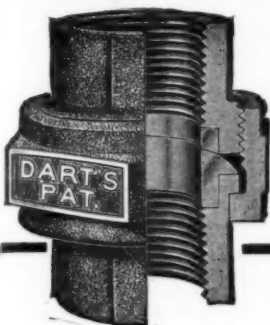
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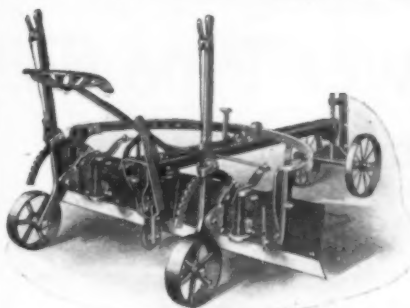
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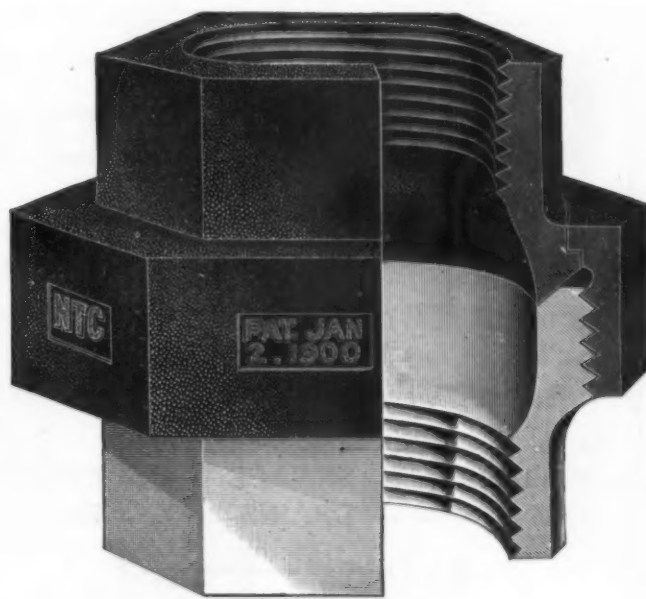
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Or else, if there are inserted brass pieces, these drop out under the force exerted  
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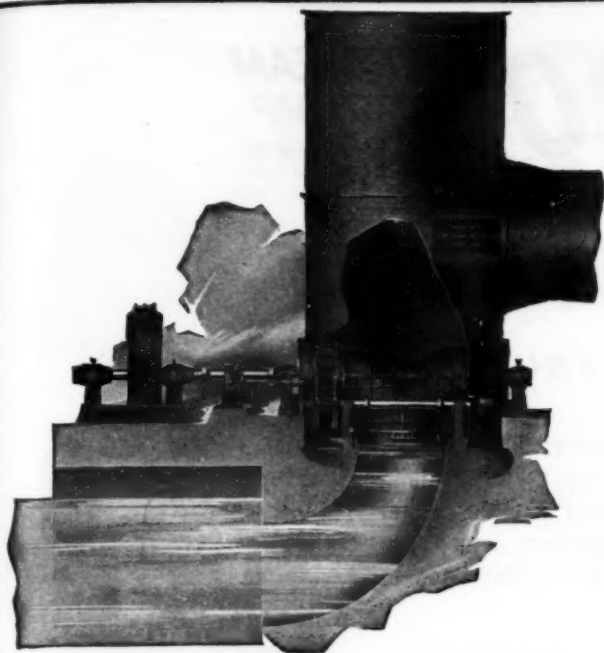
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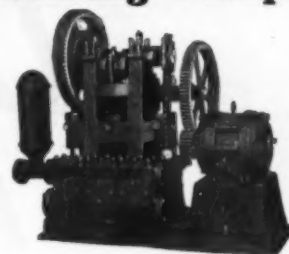
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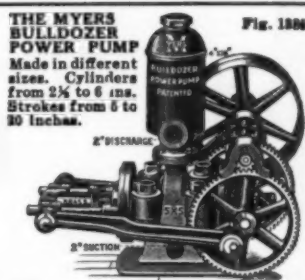
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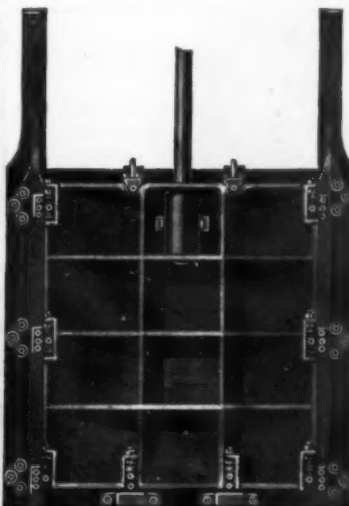
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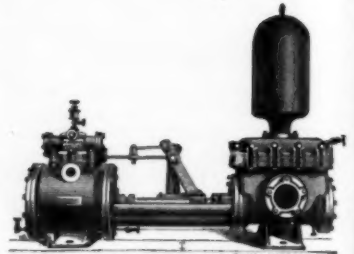
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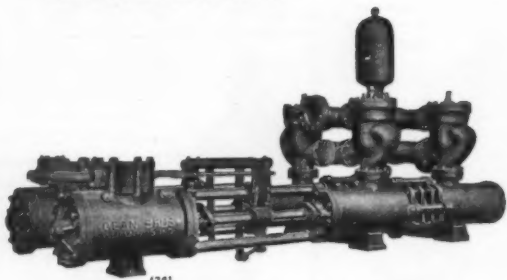
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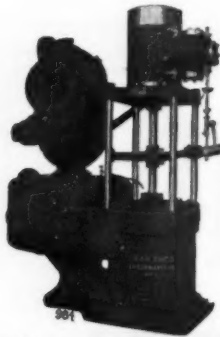
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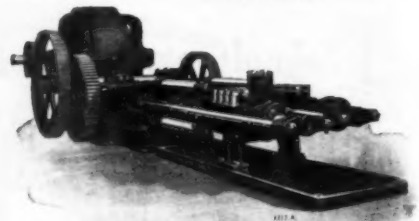
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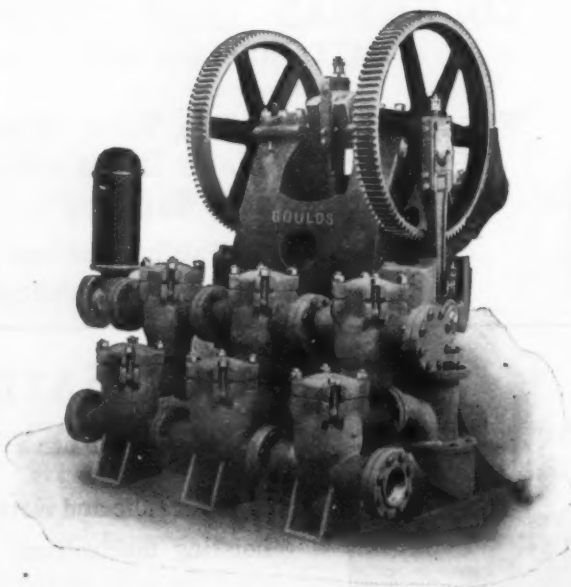


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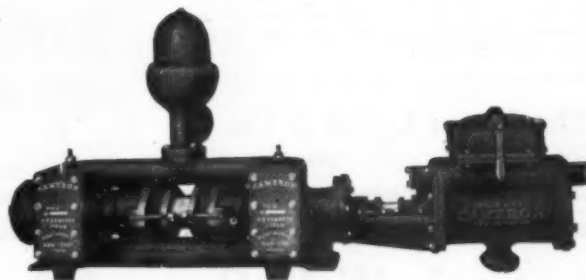
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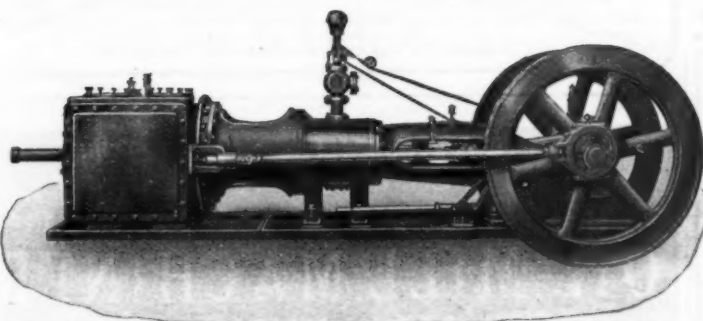
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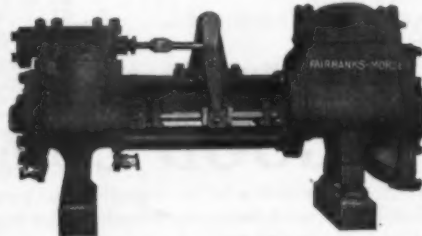
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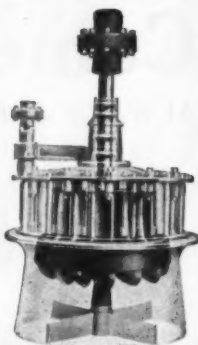
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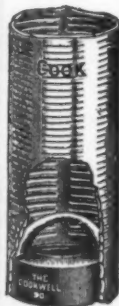
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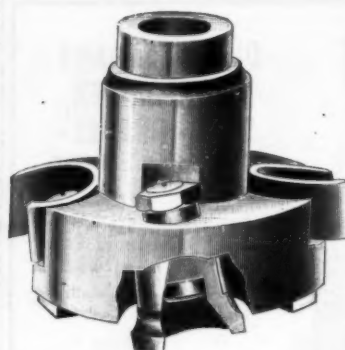
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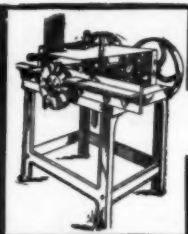


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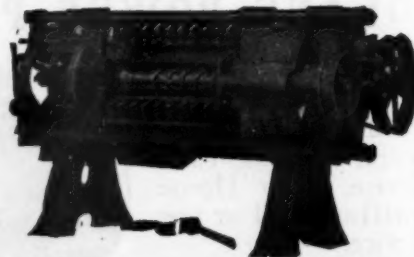
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Frames,  
Spinning  
Frames,  
Spoolers  
and Reels

## LOWELL MACHINE SHOP

LOWELL, MASS.

## Cotton Machinery

WE MANUFACTURE EVERY-  
THING REQUIRED FOR THE  
Complete Equipment  
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Plans and Estimates Furnished on  
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## The American Cotton Oil Co.

27 BEAVER STREET, - NEW YORK CITY.

CABLE ADDRESS: "AMCOTOIL," NEW YORK.

## Cottonseed Products.

OIL, CAKE, MEAL, LINTERS, ASHES, HULLS.

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**I.X.L. COOKING  
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The BEST OIL. The most WIDELY KNOWN.  
Purity Guaranteed under U. S. Pure Food Law. (Serial No. 2593.)  
Made at Refineries in  
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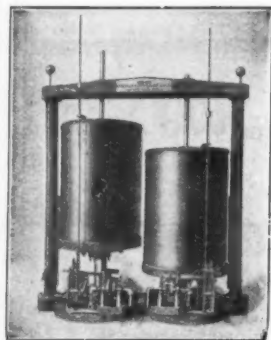


THE  
**Buckeye Iron & Brass Works**  
DAYTON, OHIO, U. S. A.

Manufacturers of

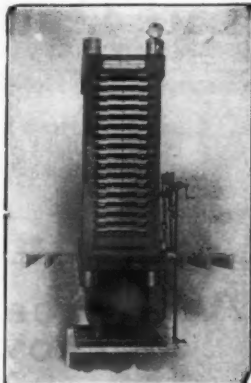
**COTTONSEED OIL MILL  
AND  
LINSEED OIL MILL  
MACHINERY**

OF ALL KINDS



ACCUMULATOR

Hydraulic  
Presses,  
Rolls,  
Hydraulic  
Pumps,  
Cake Formers,  
Meal Cookers,  
Hulling  
and  
Cleaning  
Machinery,  
Cake Breakers,  
Attrition Mills,



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**ACCUMULATORS—The Most Perfect System of  
Pressure Application**

THE VERY LATEST IMPROVEMENTS AND THE VERY BEST

Proposals advertised in the Manufacturers Record bring good results.

There's something about

**CALLAHAN**  
IMPROVED  
**FIVE HIGH CRUSHER  
ROLLS**

THAT APPEALS TO THE USER OF  
**OIL MILL MACHINERY**

The Rolls are complete—lower roll is 16 in. and the 4 upper rolls are 14 in. in diameter, with adjustable bearings bored true; self-oiling; heavy long babbitted, enclosed to keep out the dust. Feed roll has clutch pulley and top roll is furnished either plain or corrugated as desired.

Rolls provided with any style drive.

Don't forget

**CALLAHAN**  
Material and Workmanship  
**GUARANTEED**

Our catalogue mailed promptly upon request.

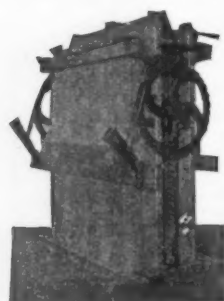
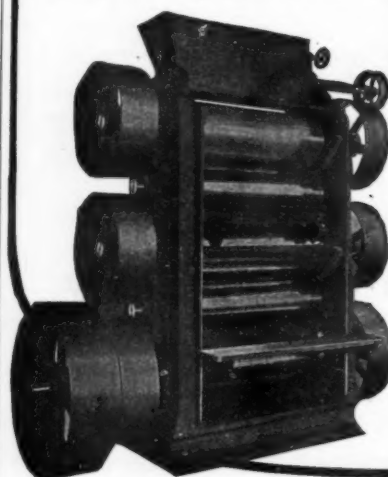
**The W. P. Callahan Co.**

Inventors and Manufacturers  
of Complete Oil Mill Equip-  
ments of All Capacities.

DAYTON, - - OHIO

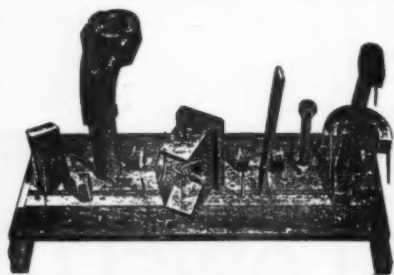
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BALING PRESSES  
FOR  
COTTON MILLS  
PAPER DEALERS  
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JUNK DEALERS  
Manufactured  
by

THE SINCLAIR-SCOTT CO., Baltimore, Md.



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ARE NOW USED BY

COTTON SEED OIL MILLS COTTON MILLS  
SUGAR CANE MILLS FLOUR and GRIST MILLS  
FERTILIZER PLANTS

To Remove Scrap Iron From Any and All Materials

MANUFACTURED BY

**DIXIE ELECTRO MAGNET CO.**

MEMPHIS, TENN.

**TIN CANS** PLAIN and  
LITHOGRAPHED  
SOUTHERN CAN COMPANY  
BALTIMORE, MARYLAND  
One of the Largest Independent Plants

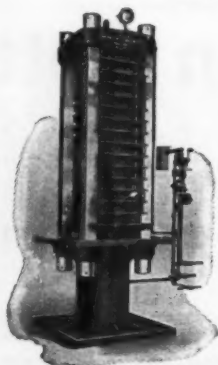
**LUMBER STACKERS  
SOULE STEAM FEEDS  
DOGS, LUMBER  
BUGGIES. ETC.**

**SOULE STEAM FEED WORKS  
MERIDIAN, MISS.**

Write for Catalog "M"

COMPLETE LINE OF IMPROVED  
**Cotton Seed Oil Mill Machinery**

Everything Necessary for the Press Room



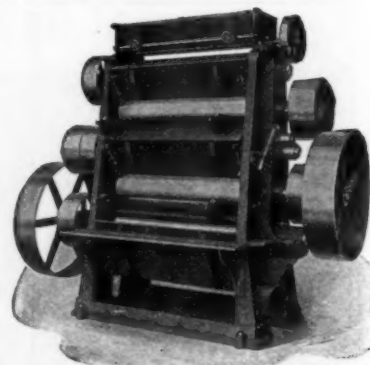
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Cotton Seed Presses  
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WRITE US FOR PRICES

**The French Oil Mill Machinery Co.**  
PIQUA, OHIO

REPRESENTATIVES: { MR. PAUL WATSON, Galveston, Texas.  
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CRUSHING ROLLS

## Cities, Towns and Railroads Inviting Factories.

### Every Variety of Timber in "A Land of Resources"

The Tennessee Central Railroad traverses the great Timber belts of Tennessee, in which is grown every variety of Wood known in the South. There are vast tracts of virgin forest available for every conceivable woodworking plant or factory. This is the home of the fine Oaks, Poplar, Lynn, Ash, Hickory, Walnut, Cherry, Cedar, Chestnut, Buckeye, Beech and Elm.

No territory could offer more advantageous locations for a

**PAPER PULP MILL AND TANNIC EXTRACT PLANT**

Let me demonstrate this to you. Address

**RUTLEDGE SMITH, Industrial Agent**

**TENNESSEE CENTRAL RAILROAD**

Cookeville, Tennessee

### THE SOUTH'S "GARDEN SPOT" IS TRAVERSED BY THE ATLANTA, BIRMINGHAM & ATLANTIC RAILROAD

Lands are reasonable in price, very fertile and adaptable to the widest range of crops. Splendid climate and excellent church and school advantages. The territory is attracting general attention throughout the country.

Those desiring to locate will do well to communicate early. Inquiries are invited and literature treating fully with the population, soil conditions, etc., will be promptly mailed.

**W. H. LEAHY**

GENERAL PASSENGER AGENT

ATLANTA, GA.

## MANUFACTORIES INVITED

### Cheap Electric Power and Labor

Bedford City, Va., offers every advantage to industrial plants generally. Has cheap electric power which is very necessary to profitable manufacturing; has good supply of labor and ample raw material of various kinds within easy reach; and is on railroad connecting with all parts of the country and seaports. Good schools, churches, healthful climate and other facilities and comforts which make it a fine place of residence.

Detailed information gladly given by the

**BOARD OF TRADE**

**BEDFORD CITY, VIRGINIA**

## The Desirability of the South

AS THE BEST PLACE TO

## Manufacture Cotton Goods

is illustrated in the increase of 67% quoted by Census Department.

We can offer attractive situations for those desiring to enter this field.

**J. A. PRIDE**

General Industrial Agent Seaboard Air Line Railway

**NORFOLK, VIRGINIA**

## FACTORY SITES

ALONG THE LINE OF

**Nashville Interurban Railway,  
Middle Tennessee R. R.**

We are interested in the location of small manufacturing plants in this splendid section. Quick service—satisfactory rates—light and power. Write today to

**R. M. WILLIAMS**

Industrial Agent

700 Broadway Nashville, Tenn.

## Merchants & Miners Transportation Co.

"SPRING SEA TRIPS"

BALTIMORE

TO

BOSTON-PROVIDENCE  
SAVANNAH-JACKSONVILLE

Through tickets to Northern and Southern points. Fine steamers; excellent service; low fares. Wireless telegraph.

Send for Booklet.

W. P. TURNER, P. T. M., BALTIMORE, MD.

## The Thriving Towns of Georgia

Offer opportunities and untold advantages for every line of business. Situated in the heart of the great COTTON BELT, in a country that is growing by leaps and bounds, and knows no hard times, they offer splendid inducements to merchants, manufacturers, professional men and every man that is willing to work. Correspondence solicited.

**Georgia Bureau of Industries  
& Immigration**

714 Century Bldg. Atlanta, Ga.

THE  
West Point  
ROUTE

**Atlanta & West Point R. R.**

THE WESTERN  
RAILWAY OF ALABAMA

Offers excellent locations for  
Truck, Fruit, Stock

And General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities.

Write for information.

**E. S. CENTER**

General Agent

EAST POINT, GA.

## Attractive Factory Sites

ON THE

## ILLINOIS CENTRAL RAILROAD

For full particulars address the undersigned

Free books of information on farm lands issued by the  
Illinois Central Railroad

## ABOUT THE SOUTH

LOUISIANA RECLAIMED LANDS MAKE  
FERTILE FARMS

THE YAZOO MISSISSIPPI VALLEY

LIVE STOCK INDUSTRY IN THE SOUTH

ALFALFA SUCCESSFULLY GROWN IN MISSISSIPPI

MADISON COUNTY, MISSISSIPPI

GRENADA COUNTY, MISSISSIPPI

TISHOMINGO COUNTY, MISSISSIPPI

TANGIPAHOA PARISH, LOUISIANA

WEST TENNESSEE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

**J. C. CLAIR**

Industrial and Immigration Commissioner

**ILLINOIS CENTRAL RAILROAD COMPANY**

185 Park Row, CHICAGO, ILL.



## Establish YOUR Business at the Base of Supplies

In Montgomery, Chattanooga, Rome, Atlanta, Macon, Columbus, Birmingham and a number of other cities and towns along the Central of Georgia Railway are factory sites which are ideal from every standpoint.

Your Iron, Coal, Coke, Timber and other raw materials are procurable at the lowest cost and in any quantities you need, as you need them, from immense supplies under your hand on every side. Efficient labor is plentiful, and water power abundant and inexpensive.

The prosperous, loyal community round about supplies a home market of great possibilities. Excellent shipping facilities open the whole country for promotion of sales on a successful competitive basis.

The progress that this district has made along industrial, commercial and agricultural lines during the past few years is but an indication of the prosperity that will mark its future. In it is the rational location for your factory. Any information you desire will be sent gladly and promptly upon request.

Address **J. M. MALLORY**

Savannah, Georgia

INDUSTRIAL AGENT

**CENTRAL OF GEORGIA  
RAILWAY**

## BUSINESS OPPORTUNITIES

There are hundreds of thriving, hustling cities along the Southern Railway, Mobile & Ohio Railroad, Georgia Southern & Florida Railway and Virginia & Southwestern Railway offering excellent openings for wholesale houses, stores, factories of all kinds and investments for capital. Here are a few specific instances of which we would like to give you more particulars.

**ADDITIONAL CAPITAL NEEDED** by an already well-established industry in a Southeastern town on the Southern Railway. Present capitalization, \$30,000. About \$10,000 additional would put this industry on a solid basis and make the man furnishing the capital executive head of the company. Refer to file 36548.

**FACTORY BUILDING FOR SALE.** Situated in a rapidly-growing Virginia city, the junction point of three trunk railway lines. Buildings were erected in 1899, and comprise a four-story main building 105x45 feet, of brick, concrete and wood construction, with 17,000 square feet of floor space. Other buildings are boiler, storage and vat houses, bark sheds and brick office. Three acres and all buildings enclosed in 12-foot high-board fence. Some machinery, including 150-horse-power engine and boiler, included with property. Ample fire protection. Seventeen acres of land included in property. All property in good repair. Full particulars and price obtained by referring to file 9640.

**GRIST MILL, MILLWRIGHT AND PAINT SHOP OPENING.** A prosperous Virginia county-seat of 1500 population in the center of a rich agricultural section, where wheat and corn grow abundantly, is in need of an up-to-date grist mill. Local farmers will lend liberal support. Also a wheelwright and paint shop is needed. A promising opening. Refer to file 38330.

**FOR RENT AT REASONABLE RATE:** Several large, brick construction factory buildings. Situated in center of manufacturing city. Track connections. Exceptional location for machine shop, foundry or woodworking factories. Refer to file No. 23590.

**LANDS FOR COLONIZATION** Investors seeking large tracts of land suitable for subdivision and sale to general, fruit or truck farmers should write us.

**HOTEL OPENINGS.** We have several desirable points for hotel men with capital.

**MANUFACTURERS** using large quantities of hardwood lumber will find many profitable sites along the Southern Railway.

Take a trip over the Southern Railway lines and see what has been accomplished in the development of manufacturing cities and towns. Put your case in our hands; let us show you the best locations for your new factory. The Southern is the great Industrial Railway of the growing South. Its lines reach from the Potomac and Ohio rivers to the Gulf of Mexico, and from the Atlantic Ocean to the Mississippi River. Somewhere along its tracks is a place for you and your works. Shall we find that place for you?

**M. V. RICHARDS, Land and Industrial Agent, Room 52**

Southern Ry., Mobile & Ohio R. R., Ga. Southern & Fla. Ry., and Va. & S. W. Ry

WASHINGTON, D. C.

# Necessity

It is necessity which makes all of America's industries possible. The needs of mankind create a demand for numberless commodities, and thus factories are enabled to flourish. The manufacturer must seek the location which is most favorable to the operation of his plant, because competition makes this necessary. Following are a few reasons why fruit canneries are a necessity of the Southwest and why Texas City is the most favorable location for such an industry.

It is a well known fact that climatic conditions of Southwest Texas are very conducive to the successful cultivation of a great variety of fruits. It is a fact, equally well known, that the process of decay sets in on the ripened fruit a good deal quicker here than in the colder climate of the North. As a result, bushels upon bushels and tons upon tons of fruit are annually lost to mankind, all or nearly all of which might be saved by canning.

Two hundred thousand people are annually pouring into the State of Texas. The greater number of these are locating in the Gulf Coast district in the vicinity of Texas City. The development of this section has, as a result, been so marked and rapid as to render the few factories located here utterly inadequate to meet the growing demands. That is why we say

## Fruit Canneries

are a necessity of the Southwest and that Texas City is the most favorable spot in the Texas Gulf Coast district.

A further reason is that Texas City is located directly in the heart of a rapidly developing fruit section. Thousands of acres are being cut up into five and ten acre tracts and are being set out to fruit trees. Thousands of dollars in freight charges and in the loss resulting from bruised and decayed fruit might be saved to the grower if canneries were on the ground, to say nothing of the saving to consumers if the cost of transportation were eliminated.

Another important proposition is the fact that at Texas City is being installed the finest and most up to date dock, warehouse and Terminal system on the American seaboard. Established steamship lines operating between Mexican and Central and South American points makes it possible to bring in various tropical fruits from these countries at the lowest possible cost, and the lines to New York, Boston, Baltimore, Liverpool, Havre and Bremen put the cannery in direct communication with the markets of the world.

Full Information Distributed by

**Texas City Transportation Co.,**

**Texas, City Texas**

## Key West's Future Assured as a Commercial and Industrial Center

The extension of the Florida East Coast Railway to Key West opened up a number of new opportunities for the establishment of profitable enterprises there, and greatly broadened the possibilities for those already in operation.

These are so many and so varied in character that they will not be catalogued now, but will be simply glanced at for the present, and left to future advertisements appearing here for fuller treatment.

Briefly, then, there is room for a greatly extended business in the manufacture of high-grade cigars from Cuban tobacco, for a large fishing business, for the manufacture of furniture from the beautiful woods to be secured in the forests of the countries to the South, in making buttons from the myriad shells easily procurable along the shores of the neighboring keys, in sponge fishing, in the manufacture of turtle soup, in jobbing houses established to do business with the islands of the Caribbean Sea and the countries to the South.

The advantageous position held by Key West with respect to these things is so apparent that reference to the map will impress it upon any observer.

Key West lies at the entrance from the Atlantic Ocean into the Gulf of Mexico, but ninety miles from Havana, nearer to the West Indies and the other southern islands than any other city of the United States, and nearer than any other to the eastern entrance to the Panama Canal, now rapidly nearing completion.

These things did not count for much when Key West could be reached only by water, but since the Florida East Coast Railway has steel-bound it to the mainland, putting it in touch by rail with the country's centers of population and business, they have become of first importance, and they give Key West a position of great strategic strength.

Business with the Caribbean Islands and the South American countries will steadily increase in the next few years, and this will be greatly accelerated by the completion of the Panama Canal.

The assured growth of this business is Key West's opportunity, and that city will naturally secure the cream of the onrushing trade.

**Florida East Coast Railway**

J. E. INGRAHAM, Vice-President  
ST. AUGUSTINE, FLA.



# Water Powers Running to Waste

The waters of the numerous rivers in the Appalachian region of the South on their way from the high land in which they have their source to sea level, present many opportunities for the development of power.

The Clinchfield road, which begins in the Cumberland Mountains and cross-sections the Blue Ridge, passes along and over a number of these streams, their waters totally unutilized—their power potentialities running to waste.

Owing to the character of the country through which these rivers run the fall of their waters is very rapid, and consequently the development of power would be comparatively cheap.

The management of the Clinchfield, recognizing the importance of these waterpower sites as factors in the development of the territory tributary to their road, had a report made upon the size and character of a number of them by a hydraulic engineer.

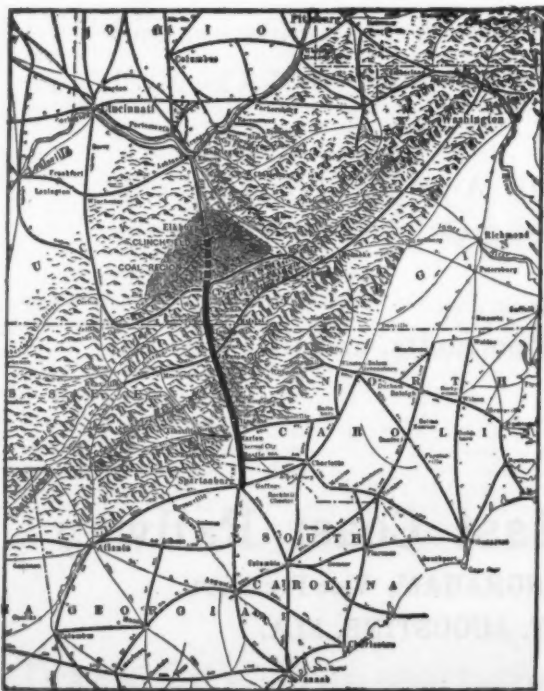
This report, which may be secured by anybody interested, shows the approximate amount of horsepower to be developed at each and the probable cost of development.

In the same section, practically alongside the waters whence the power is to be drawn, are raw materials of numerous kinds in great profusion, and of high economic value. Some of them are Shales, Iron Ore, Granite, Limestone, Mica, Marble, Kaolin, Feldspar.

But these by no means exhaust the list, for the earth is full of riches of raw material.

In addition to these there is the cotton that can be easily secured from the fields of the Carolinas, of Georgia and Alabama, and which could be most economically worked up in mills located on these streams, with looms and spindles driven by their waters, with ideal atmospheric conditions and among surrounding conditions that would make for health and contentment of mill employees.

Power sites can be secured at small cost now—they will become more expensive as their value becomes more widely known.



*A letter addressed to the Industrial Department of the Clinchfield road will procure full information.*

## Carolina, Clinchfield & Ohio Rwy.

*"THE ROAD OF OPPORTUNITY"*

J. J. Campion,  
V.-P. and Traffic Manager

R. F. Brewer,  
Industrial Agent

Johnson City, Tenn.

# Right in the Heart of Things

Did you ever contemplate the position of West Virginia with respect to the country's centers of population and commerce?

It stretches its arm North almost to the doors of Pittsburgh, with which it connects closely by both rail and water.

It is but 150 miles from Cincinnati, with the Ohio River washing its shores on its way to the big Buckeye city.

Its borders are but a few hours run from Cleveland, Columbus, Toledo and the Great Lake ports, and several railroads run direct between them.

Twelve hours away lies Chicago, and there is choice of a number of routes.

The way to St. Louis is not long by water, and is short by rail, with Louisville lying between, Memphis not far beyond, and the whole Mississippi Valley easy of access.

Washington is only fifty miles east, Baltimore but an hour's travel farther, and then come Wilmington, Philadelphia and New York, all reached in the space of six or seven hours' travel from its eastern border.

Richmond, Norfolk and the growing South are within as easy reach.

West Virginia encompasses within her own borders the best of the Appalachian coal basin—thousands of square miles of solid seams of coal.

It is the largest producer of natural gas of all the States in the Union.

It has 300,000,000 tons of high class iron ore, suitable for open hearth purposes.

It produces oil of very high quality, and the production is being greatly increased by the development of new oil territory.

It has a million and a half acres of virgin forests, abounding in hardwoods of the finest quality.

It has a large extent of territory peculiarly adapted to the production of apples and peaches in great quantity and of the best quality.

It has large deposits of limestone of a quality that makes it particularly valuable in fluxing iron.

It has sands from which is manufactured glass of the best grade.

It has shales and clays of the variety that produce the highest class brick and paving block, and drainage and building tile as well.

It has all the necessary ingredients for the finest quality of Portland cement.

West Virginia, in fact, lies right in the heart of things offering countless opportunities for profitable manufacturing and agricultural operations.

*Through its Industrial Department this railroad invites investigation in person or by correspondence on the part of manufacturers who wish to know of Specific Openings for profitable undertakings.*

## Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.



## Stock Raising a Money Maker in Mississippi and Louisiana

The settlement of the lands in Western States which formerly formed the practically free grazing grounds for the immense herds of cattle that furnished beef for the people of the country is rapidly curtailing the supply of beef cattle, and packers must turn to other sources of supply.

There is nowhere else to turn in this country except to the farms, where many small herds will be raised to take the place of the large ones that formerly roamed the western ranges.

The time will come, and that at a comparatively early day, when the fattening of a few choice steers for the market will form a part of the yearly business of every farmer located where grasses grow prolifically, where forage crops can be produced cheaply, and where fattening materials are economically at hand.

In no other part of this country are these conditions more completely met than in the rich lands of Mississippi and Louisiana, along and near the lines of the Illinois Central Railroad.

The soils of that section produce all the most nutritious grasses in abundance, and the climate is so mild that cattle can do well on pasturage all the year round—not merely exist, but grow and fatten, increase in bone and take on flesh every month of the twelve.

If it is thought better to help them along with hay and other forage crops, the soil and climate are ideal for the production of silage, of alfalfa, of Japanese cane, and of many other things that make high-class winter provender.

When the time comes to put on the top dressing, so to speak, for the market, there is the corn, cheaply produced right on the farm where the steer was raised, and the hulls of the cottonseed from the adjoining field.

These things form a combination for the production of high-class beef that cannot be excelled.

In addition to these advantages, lands of the richest sort can be secured at very low prices, and in many instances where unimproved lands are desired they can be bought so cheap that the timber will sell for enough to pay for the land and necessary improvements.

For diversified farming, with stock raising as one of its branches, no other section of the country offers opportunities equal to those found in the States of Mississippi and Louisiana along the lines of the Illinois Central.

*Write to the  
Industrial  
Department  
Full particulars  
Will be  
Furnished*

**Illinois Central Railroad**  
Chicago, Ill.

*J. C. Clair,  
Industrial  
and  
Immigration  
Commissioner,  
Chicago, Ill.*

# The Advantages of Norfolk, Virginia

Consist not only in its superb climate and a surrounding agricultural territory which supplies the early fruit and vegetables for so many of our Northern markets, but as a location for manufacturing plants in many lines its advantages are pre-eminent.

It may surprise many to know that in Norfolk

There are industrial plants now engaged in business	-	-	375
They are capitalized at	-	-	\$25,000,000
They employ, persons	-	-	13,000
They pay out in wages annually	-	-	\$5,250,000
Their products go throughout this entire country and to foreign ports.			

Any manufacturer desirous of considering a new location for his plant can hardly afford to overlook the following reasons which are fast making Norfolk a leader in Southern commerce:

Economy in assembling raw material.

Railway lines that with their connections have 42,000 miles of track.

Roads of water traversing one of the finest harbors of the world and bearing ships from the port of Norfolk under every recognized flag into every known sea.

Cheap fuel, and its attendant, cheap power.

Intelligent labor at reasonable wage.

A climate that permits outside work to be done at all seasons of the year.

Good banking facilities and plenty of money for legitimate business enterprises.

Handsome, well-attended churches, good schools and pleasant social conditions.

Unexcelled truck, provision and fish markets, permitting good living at low cost.

The Virginia Railway and Power Company is prepared to furnish power for manufacturing purposes at prices that are very attractive to practical people, and will also co-operate with you in the selection of the best adapted location.

There are in and about Norfolk numerous eligible sites for manufacturing plants which can be bought or leased at low prices and on easy terms.

## Virginia Railway and Power Company

RICHMOND

PETERSBURG

NORFOLK

PORTSMOUTH

SUFFOLK

VIRGINIA



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- Abrasive Materials.**  
Abrasive Material Co., Philadelphia, Pa.  
Carborundum Co., Niagara Falls, N. Y.  
Norton Co., Worcester, Mass.  
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**  
Baltimore Audit Co., Baltimore, Md.  
Cruselle Audit Co., Inc., Atlanta, Ga.  
Interstate Audit Co., Washington, D. C.  
Neville, Chas., Savannah, Ga.
- Adding Machines.**  
Adder Machine Co., Wilkes-Barre, Pa.  
Burroughs Adding Machine Co., Detroit, Mich.
- Agents. (Manufacturers'.)**  
Allen, Herbert F. L., Washington, D. C.
- Agricultural Implements.**  
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**  
Allen, Herbert F. L., Washington, D. C.  
American Air Compressor Wks., New York, N. Y.  
American Compressor & Pump Co., Baltimore, Md.  
Blaisdell Machinery Co., Bradford, Pa.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Gardner Governor Co., Quincy, Ill.  
General Electric Co., Schenectady, N. Y.  
Ingersoll-Rand Co., New York, N. Y.  
Nagle Corliss Engine Wks., Erie, Pa.  
Quincy Engine Co., Quincy, Pa.  
Union Steam Pump Co., Battle Creek, Mich.
- Air Motors.**  
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- Aluminum Products. (Bars, Sheets, Tubes.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Aluminum Wheels.**  
Norton Company, Worcester, Mass.
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- Anti-Friction Metals.**  
Bailey-Lebby Co., Charleston, S. C.  
Dodge Manufacturing Co., Mishawaka, Ind.  
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Virginia Railway Supply Co., Norfolk, Va.
- Anti-Rail Creepers.**  
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- Architects.**  
Cain, Shepherd & Peale, Richmond, Va.  
Lockwood, Greene & Co., Boston, Mass.  
McLaughlin & Johnson, Lynchburg, Va.  
Milburn, Helster & Co., Washington, D. C.  
Nichols, Charles H., New York, N. Y.  
Pettit, Jr., Chas. Godfrey, Danville, Va.  
Sirlin, J. E., Greenville, S. C.  
Sorey, Norman W., Norfolk, Va.
- Architects' Supplies.**  
Keuffel & Esser, Hoboken, N. J.  
Starrett Co., L. S., Athol, Mass.  
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron and Sheet Metal Work.**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.
- Art Glass.**  
Biswanger & Co., Memphis, Tenn.
- Art Glass and Prisms. (Set in Zinc and Copper.)**  
Spies Art Glass Co., G. A., St. Louis, Mo.
- Asbestos.**  
Carolina Portland Cement Co., Charleston, S. C.  
John-Manville Co., H. W., New York, N. Y.  
Southern Pipe Covering Co., Inc., Richmond, Va.
- Asphalt.**  
Armitage Mfg. Co., Richmond, Va.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
Texas Co., The, New York, N. Y.
- Asphalt Melters.**  
Steubner Iron Wks., G. L., Long Island City, N. Y.
- Automobiles. (Motor Trucks.)**  
International Motor Co., New York, N. Y.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbitt Metal. [See Anti-Friction Metal.]**
- Badges. (Hat and Breast, Electric and Steam Road, Police and Fire Dept.)**  
American Railway Supply Co., New York, N. Y.
- Bakers' Machinery.**  
Lynn Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**  
Baltimore Trust Co., Baltimore, Md.  
Barr, J. H. C., Philadelphia, Pa.  
Delaware Trust Co., Wilmington, Del.  
Electric Bond & Share Co., New York, N. Y.  
Glenn, W. S., Spartanburg, S. C.  
Halsey & Co., N. W., New York, N. Y.  
Lisman & Co., F. J., New York, N. Y.  
Mercantile Trust & Deposit Co., Baltimore, Md.  
New First National Bank, Columbus, O.  
Nuven & Co., John, Chicago, Ill.  
Savannah Bank & Trust Co., Savannah, Ga.  
Sieber & Co., H. F., Philadelphia, Pa.  
Skinner, Clifford R., Philadelphia, Pa.  
Southern States Development Co., New York, N. Y.
- Banks.**  
First National Bank, Baltimore, Md.  
First Nat'l Bank of Key West, Key West, Fla.  
Merchants National Bank, Baltimore, Md.  
New First National Bank, Columbus, O.  
National Exchange Bank, Baltimore, Md.  
Savannah Bank & Trust Co., Savannah, Ga.
- Bank and Office Railings and Grilles. (Iron.)**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chattanooga Iron & Wire Wks., Chattanooga, Tenn.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire and Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggott & Co., Baltimore, Md.  
Meyers Mfg. Co., F. J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.
- Bank Fixtures.**  
Ruse & Thompson, Baltimore, Md.
- Bar Iron. (Refined and Galvanized.)**  
Carnegie Steel Co., Pittsburgh, Pa.
- Bars, Wire, Wire Fabric, etc. (Steel for Concrete-Steel Construction.)**  
American Steel & Wire Co., Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Concrete-Steel Co., The, New York, N. Y.  
Concrete-Steel Engineering Co., New York, N. Y.  
Franklin Steel Co., Franklin, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.
- Bearings. (Ball.)**  
Standard Roller Bearing Co., Philadelphia, Pa.
- Bearings. (Brass Journal.)**  
Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.
- Bearings. (Locomotive and Car.)**  
Keystone Bronze Co., Pittsburgh, Pa.
- Bearings. (Oilless.)**  
North Amer. Metaline Co., Long Island City, N. Y.
- Bearings. (Roller.)**  
Standard Roller Bearing Co., Philadelphia, Pa.
- Bells. (Call.)**  
Holtzer-Cabot Electric Co., Boston, Mass.
- Bells and Gongs.**  
National Tube Co., Pittsburgh, Pa.  
Western Electric Co., New York, N. Y.
- Belted. (Leather, Canvas, Rubber.)**  
American Supply Co., Providence, R. I.  
Bailey-Lebby Co., Charleston, S. C.  
Baltimore Belting Co., Baltimore, Md.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Belting Co., Baltimore, Md.  
Diamond Rubber Co., Akron, O.  
Druid Oak Belting Co., Inc., Baltimore, Md.  
Gandy Belting Co., Baltimore, Md.  
Ladew, Estate Edward R., Glen Cove, N. Y.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
Norwich Belting Co., Norwich, Conn.  
Ward-Becke Co., Washington, D. C.  
Williams & Sons, I. B., Dover, N. H.
- Belted. (Chain.)**  
Bartlett & Snow Co., G. O., Cleveland, O.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Morse Chain Co., Ithaca, N. Y.
- Belt Conveyors.**  
Jeffrey Mfg. Co., Columbus, O.  
Robins Conveying Belt Co., New York, N. Y.  
Taplin-Rice-Clerkin Co., Akron, O.
- Belt Dressing.**  
Diamond Rubber Co., Akron, O.  
Gandy Belting Co., Baltimore, Md.  
Ladew, Estate Edward R., Glen Cove, N. Y.
- Belt Fasteners.**  
Crescent Belt Fastener Co., New York, N. Y.
- Belt Lacing and Supplies. [See Belting, Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**  
Church & Dwight Co., New York, N. Y.
- Blackboards. (Slate.)**  
East Bangor Con. Slate Co., The, East Bangor, Pa.  
Hower, J. K., Slaton, Pa.  
Johnson, E. J., New York, N. Y.
- Block Tackle. (For Wire or Manila Rope.)**  
Patterson Co., W. W., Pittsburgh, Pa.
- Blowers and Exhaust Fans.**  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.  
Green Fuel Economiser Co., Mattawan, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Standard Blower & Metal Mfg. Co., Atlanta, Ga.  
Sturtevant Co., B. F., Hyde Park, Mass.
- Blueprints.**  
Dixie Blueprint Co., Atlanta, Ga.
- Blueprint Apparatus.**  
Keuffel & Esser, Hoboken, N. J.
- Boilers.**  
Abendroth & Root Mfg. Co., Newburgh, N. Y.  
Babcock & Wilcox Co., New York, N. Y.  
Brownell Co., Dayton, O.  
Cameron & Barkley Co., Charleston, S. C.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago House Wrecking Co., Chicago, Ill.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Cooper Co., C. & G., Mt. Vernon, O.  
Gem City Boiler Co., Dayton, O.  
Gibbs Machinery Co., Columbia, S. C.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
Lombard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Oil City Boiler Co., Oil City, Pa.  
Petroleum Iron Works, Sharon, Pa.  
Phoenix Iron Works Co., Meadville, Pa.  
Price Machinery Co., S. M., Norfolk, Va.  
Ruemmler-Dawley Mfg. Co., St. Louis, Mo.  
Schofield & Sons Co., J. S., Macon, Ga.  
Smith-Courtney Co., Richmond, Va.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Union Iron Works Co., Selma, Ala.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Vot Machine Co., Henry, Louisville, Ky.  
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**  
Milton Mfg. Co., Milton, Pa.  
Oliver Iron & Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.
- Bonds. (Surety, etc.)**  
Fidelity & Deposit Co., Baltimore, Md.
- Boring. (Cylinder.)**  
Richmond Machine Wks., Inc., Richmond, Va.  
Strickland Machine Co., Richmond, Va.
- Bottling Outfits.**  
Vilter Mfg. Co., Milwaukee, Wis.
- Box Shooks.**  
Naylor & Co., S. E., Gulfport, Miss.
- Brass Goods.**  
Bailey-Lebby Co., Charleston, S. C.  
Buckeye Iron & Brass Works, Dayton, O.  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
McKenna Bros. Brass Co., Pittsburgh, Pa.  
Powell Co., Wm., Cincinnati, O.  
Pratt & Condy Co., Hartford, Conn.
- Brazings. (Cast Iron.)**  
Richmond Machine Works, Inc., Richmond, Va.  
Strickland Machine Co., Richmond, Va.
- Brass Railings and Grilles, etc.**  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Brewers' Machinery.**  
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Building.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.  
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Mass.  
Flake & Co., Inc., New York, N. Y.  
Hood Brick Co., B. Mifflin, Atlanta, Ga.  
Hydraulic Press Brick Co., St. Louis, Mo.  
Oconee Brick & Tile Co., Milledgeville, Ga.  
Pittsburgh-Butt Co., Pittsburgh, Pa.  
Sibley-Menge Brick & Coal Co., Birmingham, Ala.  
Scott Brick Co., Alex. A., Knoxville, Tenn.
- Brick. (Blast Furnace, Coke Oven.)**  
Hood Brick Co., B. Mifflin, Atlanta, Ga.
- Brick. (Enamelled.)**  
Amer. Enam. Brick & Tile Co., New York, N. Y.
- Brick. (Fire Clay.)**  
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Mass.  
Flake & Co., Inc., New York, N. Y.  
Kilian Fire Brick Works, Killian, S. C.  
Louisville Fire Brick Works, Highland Park, Ky.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Stevens' Sons Co., H., Macon, Ga.  
Taylor Sons Co., Chas., Cincinnati, O.  
Union Mining Co., Mt. Savage, Md.  
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.
- Brick. (Paving.)**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.  
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.
- Brick. (Silica.)**  
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**  
Carnell, George, Philadelphia, Pa.  
Fennholtz Brick Machinery Co., St. Louis, Mo.  
Freese & Co., E. M., Gallon, O.  
Scott-Madden Iron Works, Keokuk, Ia.  
Steele & Sons, J. C., Statesville, N. C.  
Taplin-Rice-Clerkin Co., Akron, O.
- Brick Fireplaces. [See Fireplaces, Artistic Brick.]**
- Brickwork. (Artistic.)**  
Flake & Co., Inc., New York, N. Y.
- Bridges. (Concrete.)**  
Concrete Steel Engineering Co., New York, N. Y.  
Roanoke Bridge Co., Inc., Roanoke, Va.
- Bridges. (Rolling Lift.)**  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges.**  
American Bridge Co. of New York, New York.  
Belmont Iron Works, Philadelphia, Pa.  
Champion Bridge Co., Wilmington, Ohio.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Farris Bridge Co., Pittsburgh, Pa.  
Memphis Bridge Co., Memphis, Tenn.  
Roanoke Bridge Co., Inc., Roanoke, Va.  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.  
York Bridge Co., York, Pa.
- Bridge and Structural Iron Paints.**  
Chattanooga Paint Co., Chattanooga, Tenn.  
Dixon Crucible Co., Joseph, Jersey City, N. J.  
Standard Paint Co., New York, N. Y.
- Brimstone.**  
Union Sulphur Co., New York, N. Y.
- Buckets. (Excavators.)**  
Hayward Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
Stebner Iron Works, G. L., Long Island City, New York, N. Y.  
Williams Co., The G. H., Cleveland, O.
- Buckets. (Ore, etc.)**  
Brown Holating Mch. Co., Cleveland, O.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Hayward Co., New York, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Smith Co., T. L., Atlanta, Ga.  
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**  
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**  
Falls City Construction Co., Louisville, Ky.  
Farris Bridge Co., Pittsburgh, Pa.  
Ferro Concrete Construction Co., Cincinnati, O.  
Selden-Breck Construction Co., St. Louis, Mo.  
Union Construction Co., St. Louis, Mo.  
White & Co., J. G., New York, N. Y.
- Buildings. (Financed and Erected.)**  
Falls City Construction Co., Louisville, Ky.  
Gulf Coast Construction Co., Houston, Tex.
- Building Supplies.**  
Armitage Mfg. Co., Richmond, Va.  
Chicago House Wrecking Co., Chicago, Ill.  
Norfolk Building Supplies Corp., Norfolk, Va.  
Southern Building Material Co., Norfolk, Va.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**  
North Amer. Metaline Co., Long Island City, N. Y.
- Cables.**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascum Rope Co., St. Louis, Mo.  
Roebeling's Sons Co., John A., Trenton, N. J.  
Williamsport Wire Rope Co., Williamsport, Pa.
- Cableways. (Overhead Suspension.)**  
Broderick & Bascum Rope Co., St. Louis, Mo.  
Flory Mfg. Co., S., Bangor, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Mead-Morrison Mfg. Co., Cambridge, Mass.  
Roebeling's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**  
Bliss Co., E. W., Brooklyn, N. Y.
- Cans.**  
New Orleans Rfg. & Metal Wks., New Orleans, La.  
Southern Can Co., Baltimore, Md.
- Canning Machinery and Supplies.**  
Robins & Co., A. K., Baltimore, Md.  
Sincial-Scott Co., Baltimore, Md.  
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**  
Carborundum Co., Niagara Falls, N. Y.
- Card Clothing.**  
American Supply Co., Providence, R. I.
- Cars. (Dump, Industrial, Logging and Mine.)**  
Austin Mfg. Co., Chicago, Ill.  
Baldwin Equipment & Supply Co., Chicago, Ill.  
Chase Fdry. & Mfg. Co., Columbus, Ohio.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hunt Co., C. W., West New Brighton, N. Y.  
Miles Co., Cincinnati, O.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Raleigh Iron Works Co., Raleigh, N. C.  
Smith Co., T. L., Atlanta, Ga.  
Steubner Iron Wks., G. L., Long Island City, N. Y.  
Union Iron Works, Selma, Ala.  
Western Wheeled Scraper Co., Aurora, Ill.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Couplers and Knuckles.**  
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Lighting and Heating.**  
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Wheels, Axles and Trucks.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Union Iron Works, Selma, Ala.
- Castings. (Aluminum.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**  
Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.  
Keystone Bronze Co., Pittsburgh, Pa.  
Phosphor-Bronze Smelting Co., Phila., Pa.  
Richmond Machine Works, Inc., Richmond, Va.  
Stratton & Bragg Co., Petersburg, Va.  
Triumph Electric Co., Cincinnati, O.
- Castings. (Iron, Gray, etc.)**  
Columbian Iron Works, Chattanooga, Tenn.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Hartley Pipe Works, Lynchburg, Va.  
Poele Engineering & Machine Co., Baltimore, Md.  
Roanoke Iron Works, Inc., Roanoke, Va.  
Robins Conveying Belt Co., New York, N. Y.  
Stratton & Bragg Co., Petersburg, Va.  
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**  
Acme Steel & Malleable Iron Wks., Buffalo, N. Y.  
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**  
Acme Steel & Malleable Iron Wks., Buffalo, N. Y.  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Reliance Steel Casting Co., Pittsburgh, Pa.
- Ceilings. (Metal.)**  
Chattanooga Rfg. & Fdy. Co., Chattanooga, Tenn.  
Edwards Manufacturing Co., Cincinnati, O.  
Hartley Steel Co., O. K., St. Louis, Mo.  
Keightley Metal Ctg. & Mfg. Co., S. Pittsburgh, Pa.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Cement.**  
Alpha Portland Cement Co., Easton, Pa.  
Cincinnati Portland Cement Co., Kingsport, Tenn.  
Dixie Portland Cement Co., Chattanooga, Tenn.  
Hartman Cement Co., Inc., Wm. G., Philadelphia, Pa.  
Ironport Portland Cement Co., Ironport, O.  
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.  
Kosmos Portland Cement Co., Inc., Louisville, Ky.  
Lehigh Portland Cement Co., Allentown, Pa.  
Security Cement & Lime Co., Baltimore, Md.  
Southern States Portland Cement Co., Rockmart, Ga.  
Standard Portland Cement Co., Leeds, Ala.  
Tidewater Portland Cement Co., Baltimore, Md.
- Cement Machinery.**  
Aising Engineering Co., J. R., New York, N. Y.  
Power & Mining Machinery Co., Cudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Chain Blocks.**  
Ford Chain Block & Mfg. Co., Philadelphia, Pa.
- Chains. (Dredge, Quarry, Steam Shovel.)**  
Weimer Chain & Iron Co., Lebanon, Pa.
- Channeled.**  
Ingersoll-Rand Co., New York, N. Y.
- Checks, Metal. (Factory, Time and Mtd.)**  
American Railway Supply Co., New York, N. Y.
- Chemists.**  
Agee, G. Worthen, Memphis, Tenn.  
Burn, Harry, Birmingham, Ala.  
Davis, Geo. C., Philadelphia, Pa.  
Froelich & Robertson, Richmond, Va.  
Lawrence, James C., Memphis, Tenn.  
McKenna, Dr. Chas. F., New York, N. Y.  
Payne, Jas. H., Yorktown, Va.
- Chimneys. (Steel-Concrete.)**  
Specialty Eng. Co., Houston, Tex.  
Weber Chimney Co., Chicago, Ill.
- Chloride Accumulator.**  
Electric Storage Battery Co., The, Phila., Pa.
- Chucks.**  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clayworking Machinery. [See Brick and Clayworking Machinery and Supplies.]**
- Cleansing Compound. (Floors, etc.)**  
India Alkali Works, Boston, Mass.
- Clocks. (Time Recorders.)**  
Kaiser, Louis E., Baltimore, Md.



**Clocks. (Watchman.)**  
Holtzer-Cabot Electric Co., Boston, Mass.  
Kaiser, Louis E., Baltimore, Md.

**Clutches.**  
Dodge Manufacturing Co., Mishawaka, Ind.

**Coal.**  
Alabama Coal & Iron Co., Birmingham, Ala.  
Cincinnati Coal Corp., Dante, Va.  
Cincinnati Fuel Co., Spartanburg, S. C.  
Consolidation Coal Co., Inc., New York, N. Y.  
East Top Fuel Co., Bluefield, W. Va.  
Pittsburgh-Buffalo Co., Pittsburgh, Pa.  
Tennessee Coal, Iron & R. R. Co., B'ingh'm, Ala.

**Coal Cutters.**  
Ingersoll-Rand Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.

**Coal Handling Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Brown Hoisting Mch. Co., Cleveland, O.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., West New Brighton, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Mead-Morrison Mfg. Co., Cambridge, Mass.  
Robins Conveying Belt Co., New York, N. Y.  
Williams Co., The G. H., Cleveland, O.

**Coal Tar and By-Products.**  
Barrett Mfg. Co., Philadelphia, Pa.

**Coke.**  
Alabama Coal & Iron Co., Birmingham, Ala.  
Flat Top Fuel Co., Bluefield, W. Va.  
Pittsburgh-Buffalo Co., Pittsburgh, Pa.  
Tennessee Coal, Iron & R. R. Co., B'ingh'm, Ala.

**Concrete Construction. (Steel Reinforcement.)**  
American Steel & Wire Co., Chicago, Ill.  
Brown Hoisting Machinery Co., Cleveland, O.  
Concrete Steel Co., The, New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Ferro Concrete Construction Co., Cincinnati, O.  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Jeffrey Mfg. Co., Columbus, O.  
Reichert Mfg. Co., Milwaukee, Wis.  
Specialty Eng. Co., Houston, Tex.  
Unit Construction Co., St. Louis, Mo.

**Concrete Curb Protection. (Steel.)**  
Steel Protected Concrete Co., Philadelphia, Pa.

**Concrete Dams.**  
Ambursen Hydraulic Const. Co., Boston, Mass.  
Hydraulic Properties Co., New York, N. Y.

**Concrete Forms. (Metal.)**  
Reichert Mfg. Co., Milwaukee, Wis.

**Concrete Mixers.**  
Jeffrey Mfg. Co., Columbus, O.  
Marshall-Capron Mfg. Co., Chicago, Ill.  
Smith Co., T. L., Atlanta, Ga.  
Standard Scale & Supply Co., Pittsburgh, Pa.

**Concrete Pile. (Corrugated.)**  
The Underground Const. Co., St. Louis, Mo.

**Concrete Reinforcing Bars.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Concrete Steel Co., The, New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Franklin Steel Co., Franklin, Pa.

**Concrete Ties.**  
Universal Concrete Tie Co., New Orleans, La.

**Condensers.**  
Alberger Condenser Co., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Westinghouse Machine Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.

**Conductor Pipe.**  
Edwards Mfg. Co., Cincinnati, O.  
Hussey & Co., C. G., Pittsburgh, Pa.  
Milwaukee Corrugating Co., Milwaukee, Wis.

**Contractors. (Diamond Drill.)**  
Ameling Prospecting Co., H. R., St. Louis, Mo.

**Contractors. (Hydro-Electric Developments.)**  
Multiple Arch Hyd. Cons. Co., Spartanburg, S. C.

**Contractors' Machinery and Supplies. [See also Hoisting Machinery.]**

American Engineering Co., Philadelphia, Pa.  
American Hoist & Derrick Co., St. Paul, Minn.  
American Locomotive Co., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.  
Clyde Iron Works, Duluth, Minn.  
Contractors' Plant Mfg. Co., Buffalo, N. Y.  
Exeter Machine Works, Pittston, Pa.  
Flory Mfg. Co., S., Bangor, Pa.  
Hoy Bros. & Co., Pittsburgh, Pa.  
Ingersoll-Rand Co., New York, N. Y.  
Males Co., Cincinnati, O.  
Marine Metal & Supply Co., New York, N. Y.  
Maryland Equipm't & Supply Co., Baltimore, Md.  
Mead-Morrison Mfg. Co., Cambridge, Mass.  
Monaghan Mch. Co., Chicago, Ill.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Pickett Co., Inc., H. W., Philadelphia, Pa.  
Pipe & Contractors' Supply Co., New York, N. Y.  
Robins Conveying Belt Co., New York, N. Y.  
Smith Co., T. L., Atlanta, Ga.  
Steinberg, Iron Works, G. L., Long Island City, New York, N. Y.

**Conveying Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Brown Hoisting Mch. Co., Cleveland, O.  
Caldwell & Son, H. W., Chicago, Ill.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Flory Mfg. Co., S., Bangor, Pa.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., West New Brighton, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Mead-Morrison Mfg. Co., Cambridge, Mass.  
McLanahan-Stone Mch. Co., Hollidaysburg, Pa.  
Robins Conveying Belt Co., New York, N. Y.  
Taplin-Rice-Clerkin Co., Akron, O.

**Cooling Towers.**  
Alberger Condenser Co., New York, N. Y.  
Bassett-Dawson Mfg. Co., St. Louis, Mo.

**Cordage.**  
American Mfg. Co., New York, N. Y.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
International Cotton Mills Corp., New York, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.

**Copperage Stock and Box Shook Machinery.**  
Peter Gerlach Co., Cleveland, O.

**Core Drilling. (Contractors.)**  
Ameling Prospecting Co., H. R., St. Louis, Mo.

**Cordage Machinery.**  
Haskell-Dawson Machinery Co., Boston, Mass.

**Corn-Mill Machinery.**  
Nordyke & Marrison Co., Indianapolis, Ind.  
Raymond Bros., Impact Pulv. Co., Chicago, Ill.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

**Cotton Duck.**  
International Cotton Mills Corp., New York, N. Y.

**Cotton Oil and Products.**  
American Cotton Oil Co., New York, N. Y.

**Cotton Yarns. (Commission Merchants.)**  
Paulson, Linkroum & Co., New York, N. Y.

**Cotton-Gin Machinery.**  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
Gibbs Machinery Co., Columbia, S. C.

**Cotton-Mill Machinery.**  
American Mach. & Mfg. Co., Charlotte, N. C.  
American Supply Co., Providence, R. I.  
Draper Co., Hopedale, Mass.  
Kilson Machine Shop, Lowell, Mass.  
Lowell Machine Shop, Lowell, Mass.  
Mason Machine Works, Taunton, Mass.  
Saco-Pettee Co., Newton Upper Falls, Mass.  
Whitlin Machine Works, Whitinsville, Mass.  
Whitinsville Spinning Ring Co., Whitinsville, Mass.

**Cotton-Mill Supplies.**  
American Supply Co., Providence, R. I.  
Whitinsville Spinning Ring Co., Whitinsville, Mass.

**Cottonseed-Oil Machinery.**  
Buckeye Iron & Brass Works, Dayton, O.  
Burruss Engineering Co., Atlanta, Ga.  
Callahan Co., W. R., Dayton, O.  
Cardwell Machine Co., Richmond, Va.  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Couplings.**  
American Spiral Pipe Works, Chicago, Ill.  
Brown Co., A. & F., New York, N. Y.  
Caldwell Co., Inc., W. R., Louisville, Ky.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Pratt & Coady Co., Hartford, Conn.  
Sinclair Scott Co., Baltimore, Md.  
Wood's Sons, T. B., Chambersburg, Pa.

**Couplings. (Car.)**  
Weimer Chain & Iron Co., Lebanon, Pa.

**Couplings. (Hose, Air, Gas, Steam and Water.)**  
National Tube Co., Pittsburgh, Pa.

**Coverings. (Pipe, Boiler, etc.)**  
Carolina Portland Cement Co., Charleston, S. C.  
Johns-Manville Co., H. W., New York, N. Y.  
Southern Pipe Covering Co., Inc., Richmond, Va.

**Cowls.**  
Pullman Auto. Ventilator Mfg. Co., York, Pa.

**Cranes. (Locomotive.)**  
American Hoist & Derrick Co., St. Paul, Minn.  
Brown Hoisting Machinery Co., Cleveland, O.  
Exeter Machine Works, Pittston, Pa.  
Ohio Locomotive Crane Co., Bucyrus, O.

**Cranes. (Traveling, Hand, Power, Hydraulic.)**  
Brown Hoisting Machinery Co., Cleveland, O.  
Hayward Co., New York, N. Y.  
Lane Mfg. Co., Montpelier, Vt.  
Northern Engineering Works, Detroit, Mich.  
Speidel, J. G., Reading, Pa.

**Crays.**  
Lowell Crayon Co., Lowell, Mass.

**Crematories. (Garbage.)**  
Specialty Eng. Co., Houston, Tex.

**Creosoted Wood Block. (Contractors for Laying.)**  
Creosoted Wood Block Pav. Co., New Orleans, La.

**Creosoting Works.**  
Gulfport Creosoting Co., Gulfport, Miss.  
Internat'l Creosot'g & Cons. Co., Galveston, Tex.  
National Lumber & Creos. Co., Texarkana, Ark.  
Southern Creosoting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossarms and Pins.**  
Carolina Electric Co., Raleigh, N. C.  
Internat'l Creosot'g & Cons. Co., Galveston, Tex.  
Southern Creosoting Co., Ltd., Slidell, La.  
Western Electric Co., New York, N. Y.

**Crossings. [See Railroad Frogs and Switches.]**

**Crossing Machine.**  
Standard Cross Tie Mch. Co., New Orleans, La.

**Crossties.**  
Internat'l Creosot'g & Cons. Co., Galveston, Tex.  
National Lumber & Creos. Co., Texarkana, Ark.  
Taylor & Co., S. E., Gulfport, Miss.  
Southern Creosoting Co., Ltd., Slidell, La.  
Universal Concrete Tie Co., New Orleans, La.

**Crossties. (Reinforced Concrete.)**

**Crossties. (Steel.)**  
Carnegie Steel Co., Pittsburgh, Pa.

**Crushers. (Corn and Cob.)**  
Gardner Crusher Co., New York, N. Y.

**Crushers. (Rock.)**  
American Pulverizer Co., St. Louis, Mo.  
Austin Mfg. Co., Chicago, Ill.  
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.  
Crescon Co., Geo. V., Philadelphia, Pa.  
Gardner Crusher Co., New York, N. Y.  
Smith Co., T. L., Atlanta, Ga.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheel Scraper Co., Aurora, Ill.

**Crushing and Pulverizing Machinery.**  
Aising Engineering Co., J. R., New York, N. Y.

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American Rolling Mill Co., Middletown, O.  
Canton Culvert Co., The, Canton, O.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Harry Bros. Co., Newport, Ky.  
Harry Steel Co., O. K., St. Louis, Mo.  
Kentucky Culvert Mfg. Co., Beech, Ky.  
New Orleans Mfg. & Metal Wks., New Orleans, La.  
North Carolina Metal Culv. Co., Greensboro, N. C.  
Roanoke Bridge Co., Roanoke, Va.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Metal & Culvert Co., Inc., Roanoke, Va.

**Culverts. (Vitrified Pipe.)**  
Bibb Sewer Pipe Co., Macon, Ga.  
Stevens Sons Co., H., Macon, Ga.

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Northern Engineering Works, Detroit, Mich.  
Paxson Co., J. W., Philadelphia, Pa.  
Petroleum Iron Works Co., Sharon, Pa.

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Howard & Co., Savannah, Ga.

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Baltimore Maryland Engr. Co., Baltimore, Md.

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Shimer & Sons, Samuel J., Milton, Pa.

**Cutter Grinders.**  
Abrasive Material Co., Philadelphia, Pa.  
Vitrified Wheel Co., Westfield, Mass.

**Dams. (Multiple Arch Masonry.)**  
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.

**Dams. (Reinforced Concrete.)**  
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Hydraulic Properties Co., New York, N. Y.

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American Hoist & Derrick Co., St. Paul, Minn.  
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American Hoist & Derrick Co., St. Paul, Minn.  
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Hayward Co., The, New York, N. Y.  
Marion-Osgood Co., Marion, O.  
Marion Steam Shovel Co., Marion, O.  
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Kinnear Mfg. Co., Columbus, O.

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Victor Mfg. Co., Newburyport, Mass.

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Dahlstrom Metallic Door Co., Jamestown, N. Y.

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Weimer Chain & Iron Co., Lebanon, Pa.

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Norborn Engineering Co., Philadelphia, Pa.

**Dredges. [See Excavating Machinery.]**

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Jeffrey Mfg. Co., Columbus, O.  
Wickes Bros., Jersey City, N. J.

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Manning, Maxwell & Moore, Inc., New York, N. Y.  
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Richmond Forging Corporation, Richmond, Va.

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American Blower Co., Detroit, Mich.  
American Process Co., New York, N. Y.  
Bailey-Lebby Co., The, Charleston, S. C.  
Buffalo Forge Co., Buffalo, N. Y.  
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Sidney Elevator & Mfg. Co., Sidney, O.  
Speidel, J. G., Reading, Pa.

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Case Threshing Mch. Co., Inc., J. I., Racine, Wis.  
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Troy Wagon Works Co., Troy, O.

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du Pont de Nemours Powder Co., E. I., Wilmington, Del.

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De Laval Steam Turbine Co., Trenton, N. J.  
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Gregory Electric Co., Chicago, Ill.  
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Ridgway Dynamo & Engine Co., Ridgway, Pa.  
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Curran Elevator Co., James H., Cincinnati, O.  
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Kansas City Elevator Mfg. Co., Kansas City, Mo.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Otis Elevator & Machine Co., Columbus, O.  
Otis Elevator Co., New York, N. Y.  
Sidney Elevator & Mfg. Co., Sidney, O.  
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**Elevator Safety Appliances.**  
Roth Elevator Safety Co., Inc., Baltimore, Md.

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**Elevator Enclosures and Cabs.**

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Dow Wire and Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggott & Co., Baltimore, Md.  
Meyers Mfg. Co., The Fred J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.  
Otis Elevator Co., New York, N. Y.  
Southern Wire and Iron Mfg. Co., Dallas, Tex.

**Elevator Rope. [See Wire Rope.]**

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Richmond Safety Gate Co., Richmond, Ind.

**Emery Wheels. [See Grinding Wheels.]**

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Fols, F. Julius, Lexington, Ky.  
Graham, Edgar M., Muskogee, Okla.  
Hill, Norman A., Baltimore, Md.  
Jaudon Engineering Co., H. S., Savannah, Ga.  
Lawrence, James C., Memphis, Tenn.  
Lewis, Fred H., Birmingham, Ala.  
Lide, Martin J., Birmingham, Ala.  
Macfarren, S. J., Washington, D. C.  
Myers & Co., Ernest L., Dallas, Tex.  
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Hague, John, St. Louis, Mo.  
Harlow Co., James H., Baltimore, Md.  
Jaudon Engineering Co., H. S., Savannah, Ga.  
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Mellor Furnace Engineering Co., Philadelphia, Pa.  
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Multiple Arch Hyd. Cons. Co., Ltd., Spartanburg, S. C.  
Neville, Wm. H., New Orleans, La.  
Quick, Alfred M., Baltimore, Md.  
Sircine, J. E., Greenville, S. C.  
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Manning-Hughes Co., Camden, S. C.  
Mellor Furnace Engineering Co., Philadelphia, Pa.  
Mole, H. E., New York, N. Y.  
Multiple Arch Hyd. Cons. Co., Ltd., Spartanburg, S. C.  
Neville, Wm. H., New Orleans, La.  
Quick, Alfred M., Baltimore, Md.  
Sircine, J. E., Greenville, S. C.  
Spiker, Wm. C., Atlanta, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Whitfield, Geo. H., Richmond, Va.

**DRAINAGE.**  
Brindley Co., New York, N. Y.

**EFFICIENCY.**  
Macfarren, S. J., Washington, D. C.

**ELECTRIC, CIVIL, ETC.**

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Lewis, Fred H., Birmingham, Ala.  
Lide, Martin J., Birmingham, Ala.  
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Reding & Howard, Baltimore, Md.  
Rucker, B. Parks, Charlotte, N. C.  
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Whitfield, Geo. H., Richmond, Va.  
Young Co., C. S., San Antonio, Tex.



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- Engineers—**  
**GAS.**  
 Les, Henry I., Chicago, Ill.
- GEOLOGICAL.**  
 Bureau of Assoc. Geological Engineers, Boston, Mass.  
 Davis, Geo. C., Philadelphia, Pa.  
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 Froehling & Robertson, Richmond, Va.
- HYDRAULIC, SANITARY AND SEWERAGE.**  
 Brindley Co., New York, N. Y.  
 Brown, S. D., Chattanooga, Tenn.  
 Harlow Co., James H., Baltimore, Md.  
 Hutton, T. Chalkley, Wilmington, Del.  
 Leete-Maupin Engineering Co., Huntington, W. Va.  
 Manning-Hughes Co., Camden, S. C.  
 McCarty Co., The J. B., Atlanta, Ga.  
 Multiple Arch Hydraulic Const. Co., Ltd., Spar-tanburg, S. C.  
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 Otto Gas Engine Works, Philadelphia, Pa.  
 Power Mfg. Co., Lima, Ohio.  
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 Westinghouse Machine Co., The, Pittsburgh, Pa.  
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 Power Mfg. Co., Lima, O.
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 Buffalo Forge Co., Buffalo, N. Y.  
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 Harriburg Flyg. & Mach. Wks., Harrisburg, Pa.  
 Houston, Stanwood & Gamble Co., Cincinnati, O.  
 Leffel & Co., James, Springfield, O.  
 Lombard Iron Works, Augusta, Ga.  
 Mecklenburg Iron Works, Charlotte, N. C.  
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 Westinghouse Machine Co., Pittsburgh, Pa.
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 Hayward Co., New York, N. Y.  
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- Exhaust Heads.**  
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 National Pipe Bending Co., New Haven, Conn.  
 Scaffie & Sons Co., Wm. B., Pittsburgh, Pa.  
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 American Steel & Wire Co., Chicago, Ill.  
 Bolles Iron & Wire Works, J. E., Detroit, Mich.  
 Dow Wire and Iron Works, Louisville, Ky.  
 Dufur & Co., Baltimore, Md.  
 New Jersey Wire Cloth Co., Trenton, N. J.  
 Ohio Elevator & Mach. Co., The, Columbus, O.
- Fertilizer Machy. [See also Phosphate Machy.]**  
 Pratt Eng. & Mch. Co., Atlanta, Ga.  
 Smith Co., T. L., Atlanta, Ga.  
 Valk & Murdock Iron Works, Charleston, S. C.  
 Walker & Elliott, Wilmington, Del.  
 Wilmington Iron Works, Wilmington, N. C.
- Files.**  
 Barnett Co., G. & H., Philadelphia, Pa.  
 Delta File Works, Philadelphia, Pa.  
 Nicholson File Co., Providence, R. I.
- Filters. (Water, for Domestic and Industrial Purposes.)**  
 American Water Softener Co., Philadelphia, Pa.  
 International Filter Co., Chicago, Ill.  
 Lynn-Superior Co., The, Cincinnati, O.  
 New York Con. Jewell Fil. Co., New York, N. Y.  
 Roberts Filter Mfg. Co., Philadelphia, Pa.  
 Scaffie & Sons Co., Wm. B., Pittsburgh, Pa.  
 Tucker & Laxton, Charlotte, N. C.
- Financial Publication.**  
 Financial Review, New York, N. Y.
- Fire Alarm Boxes.**  
 Balto. Mch. Products Co. (Relay Station P. O.), Baltimore, Md.
- Fire Clay.**  
 West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.
- Fire Clay Brick. [See Brick, Fire Clay.]**
- Fire Door Fixtures.**  
 Victor Mfg. Co., Newburyport, Mass.
- Fire Extinguishers.**  
 Badger & Sons Co., E. B., Boston, Mass.  
 General Fire Extinguisher Co., Providence, R. I.  
 Kaiser, Louis E., Baltimore, Md.
- Fire Extinguishing Apparatus.**  
 General Fire Extinguisher Co., Providence, R. I.
- Fire Escapes.**  
 Bolles Iron & Wire Works, J. E., Detroit, Mich.  
 Chesapeake Iron Works, Baltimore, Md.
- Fireplaces. (Artistic Brick.)**  
 Flske & Co., Inc., New York, N. Y.
- Fireproof Building Construction. (Steel.)**  
 [See Concrete Construction.]
- Fireproof Building Material.**  
 Dahlstrom Metallic Door Co., Jamestown, N. Y.  
 Johns-Manville Co., H. W., New York, N. Y.
- Fireproof Doors and Shutters.**  
 Dahlstrom Metallic Door Co., Jamestown, N. Y.  
 Klineair Mfg. Co., Columbus, O.  
 New Orleans Roof & Metal Co., New Orleans, La.  
 Richmond Safety Gate Co., Richmond, Ind.  
 Victor Mfg. Co., Newburyport, Mass.
- Fireproof Windows. [See Window Frames and Sashes (Fireproof).]**
- Flanges. (Iron and Steel.)**  
 American Cast Iron Pipe Co., Birmingham, Ala.  
 American Pipe & Construction Co., Phila., Pa.  
 American Spiral Pipe Works, Chicago, Ill.  
 Cameron Steam Pump Wks., A. S., New York, N. Y.  
 Dart Manufacturing Co., E. M., Providence, R. I.  
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
 McWane Pipe Works, Lynchburg, Va.  
 National Tube Co., Pittsburgh, Pa.  
 U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.  
 Wood & Co., R. D., Philadelphia, Pa.
- Flexible Joints.**  
 Moran Flex. Steam Joint Co., Inc., Louisville, Ky.
- Flooring. (Cement.)**  
 Dagostin & Angell Bros., Montgomery, Ala.
- Flooring. (Hardwood, Maple, Oak.)**  
 Northcross Mantel Co., W. J., Memphis, Tenn.  
 Nashville Hardw'd Flooring Co., Nashville, Tenn.
- Flour and Grist Mill Machinery and Sup-plies.**  
 Caldwell & Sons Co., H. W., Chicago, Ill.  
 Nordyke & Marmion Co., Indianapolis, Ind.  
 Salem Foundry & Machine Works, Salem, Va.  
 Starr Co., E. F., Baltimore, Md.  
 Veatch & Co., L. R., Louisville, Ky.  
 Wolf Co., Chambersburg, Pa.
- Flushtank Regulator.**  
 Modern Iron Works, Quincy, Ill.
- Foot Valves.**  
 Cameron Steam Pump Wks., A. S., New York, N. Y.
- Forges.**  
 Buffalo Forge Co., Buffalo, N. Y.  
 Sturtevant Co., B. F., Hyde Park, Mass.
- Forgings.**  
 Joliet Forge Co., Joliet, Ill.  
 Richmond Forging Corporation, Richmond, Va.  
 Welmer Chain & Iron Co., Lebanon, Pa.
- Foundations. (Waterproof.)**  
 Underground Constr. Co., The, St. Louis, Mo.
- Foundry Equipment and Supplies.**  
 Paxson Co., J. W., Philadelphia, Pa.
- Freight Contractors. (Foreign and Domestic.)**  
 Howard & Co., Savannah, Ga.
- Frogs. [See Railroad Frogs and Switches.]**
- Fuel Economizer.**  
 Green Fuel Economizer Co., Mattawan, N. Y.  
 Sturtevant Co., B. F., Hyde Park, Mass.
- Fuel Oil.**  
 Gulf Refining Co., Pittsburgh, Pa.  
 Texas Co., The, New York, N. Y.
- Fuel Oil Equipment.**  
 Petroleum Iron Works Co., Sharon, Pa.
- Fuses, Bases and Fittings.**  
 Johns-Manville Co., H. W., New York, N. Y.
- Galvanized Steel and Iron.**  
 American Sheet & Tin Plate Co., Pittsburgh, Pa.  
 J. C. H. Galvanizing Co., Philadelphia, Pa.  
 La Belle Iron Works, Steubenville, O.  
 McCalla, Harold, Philadelphia, Pa.  
 New Orleans Roof & Metal Co., New Orleans, La.  
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
 Youngstown Sheet & Tube Co., Youngstown, O.
- Galvanizing Machinery.**  
 Wilfong Iron Works Co., Millard F., Phila., Pa.
- Garages. (Fireproof and Portable.)**  
 Harry Steel Co., O. K., St. Louis, Mo.
- Gas Blowers. (Turbine.)**  
 Terry Steam Turbine Co., New York, N. Y.
- Gas Compressors.**  
 Blaisdell Machinery Co., Bradford, Pa.  
 Ingersoll-Rand Co., New York, N. Y.
- Gas Engines. [See Engines, Gas.]**
- Gas Plants.**  
 Western Gas Construction Co., Ft. Wayne, Ind.
- Gas Producers.**  
 Bogart Gas Power Eng. Co., Buffalo, N. Y.  
 Otto Gas Engine Works, Philadelphia, Pa.  
 Standard Gas Power Co., Atlanta, Ga.  
 Westinghouse Machine Co., Pittsburgh, Pa.  
 Wood & Co., R. D., Philadelphia, Pa.
- Gasoline and Kerosene.**  
 Gulf Refining Co., Pittsburgh, Pa.  
 Texas Co., The, New York, N. Y.
- Gas and Steam Fitters' Tools.**  
 Saunders' Sons, D., Yonkers, N. Y.
- Gaskets. (Rubber.)**  
 N. J. Car Spring & Rubber Co., Jersey City, N. J.
- Gears.**  
 Albro-Clem Elevator Co., Philadelphia, Pa.  
 Brown Co., A. & F., New York, N. Y.  
 Caldwell & Son Co., Inc., W. E., Louisville, Ky.  
 Caldwell & Son Co., H. W., Chicago, Ill.  
 Cresson Co., Geo. V., Philadelphia, Pa.  
 Dodge Manufacturing Co., Mishawaka, Ind.  
 Earle Gear & Machine Co., The, Philadelphia, Pa.  
 Jeffrey Mfg. Co., Columbus, O.  
 Poole Engineering & Machine Co., Baltimore, Md.
- Geologists.**  
 Bureau of Assoc. Geological Engineers, Boston, Mass.  
 Froehling & Robertson, Richmond, Va.
- Glass. (Plate, etc.)**  
 Rinswanger & Co., Memphis, Tenn.  
 Holophane Co., Newark, Ohio.
- Governors.**  
 Pickering Governor Co., Portland, Conn.
- Grain Elevator Supplies.**  
 Caldwell & Sons Co., H. W., Chicago, Ill.  
 Dodge Manufacturing Co., Mishawaka, Ind.  
 Jeffrey Mfg. Co., Columbus, O.  
 Link-Belt Co., Nictown (Philadelphia), Pa.
- Graphite.**  
 Chester Graphite Co., Chester Springs, Pa.  
 Dixon Crucible Co., Joseph, Jersey City, N. J.
- Grates and Grate Bars.**  
 Mellor Furnace Engineering Co., Philadelphia, Pa.  
 Thomas Grate Bar Co., Birmingham, Ala.
- Gravel.**  
 Arundel Sand & Gravel Co., Baltimore, Md.  
 Lathrop & Co., C. P., Richmond, Va.
- Grease.**  
 Albany Lubricating Co., New York, N. Y.
- Grease Cups.**  
 Albany Lubricating Co., New York, N. Y.
- Greases and Lubricating Compounds.**  
 Albany Lubricating Co., New York, N. Y.  
 Galena Signal Oil Co., Franklin, Pa.  
 Robinson & Son Co., Wm. C., Baltimore, Md.  
 Texas Co., The, New York, N. Y.
- Grinders. (Gypsum, Limestone, etc.)**  
 Gardner Crusher Co., New York, N. Y.  
 Taplin-Rice-Clerkin Co., Akron, O.  
 Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
- Grinding Wheels.**  
 Abrasive Material Co., Philadelphia, Pa.  
 Carborundum Co., Niagara Falls, N. Y.  
 Norton Co., Worcester, Mass.  
 Vitrified Wheel Co., Westfield, Mass.
- Groovers.**  
 Huther Bros. Saw Mfg. Co., Rochester, N. Y.
- Gunpowder.**  
 du Pont de Nemours Powder Co., E. I., Wilming-ton, Del.
- Hammers. (Steam, Power, Pneumatic.)**  
 Chicago Pneumatic Tool Co., Chicago, Ill.  
 Independent Pneumatic Tool Co., Chicago, Ill.  
 Ingersoll-Rand Co., New York, N. Y.
- Hand Elevators.**  
 McKenna Bros. Brass Co., Pittsburgh, Pa.  
 Sidney Elevator Mfg. Co., Sidney, O.
- Handle Machinery. [See Woodworking Machy.]**
- Hangers. [See Pulleys, Shafting and Hangers.]**
- Hardwood Doors and Trim.**  
 Massee & Felton Lumber Co., Macon, Ga.
- Hauling Engines. (Steam Traction.)**  
 Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
- Hay Tools.**  
 Myers & Bro., F. E., Ashland, O.
- Heater. (Portable, for Bituminous Pavements.)**  
 Ruggles-Coles Engineering Co., New York, N. Y.
- Heating Apparatus, Engineers and Con-tractors.**  
 American Blower Co., Detroit, Mich.  
 Buffalo Steam Pump Co., Buffalo, N. Y.  
 Monitor Steam Generator Mfg. Co., Balto., Md.  
 Peck-Hammond Co., The, Cincinnati, O.  
 Richmond Engr. & Mfg. Co., Richmond, Va.  
 Sturtevant Co., B. F., Hyde Park, Mass.
- Hoisting Machinery.**  
 American Engineering Co., Philadelphia, Pa.  
 American Hoist & Derrick Co., St. Paul, Minn.  
 Brown Hoisting Mch. Co., Cleveland, O.  
 Byers Machine Co., John F., Ravenna, O.  
 Clyde Iron Works, Duluth, Minn.  
 Contractors' Plant Mfg. Co., Buffalo, N. Y.  
 Erie Clutch & Pulley Co., Erie, Pa.  
 Exeter Machine Works, Pittsburg, Pa.  
 Flory Mfg. Co., S., Bangor, Pa.  
 Hayward Co., New York, N. Y.  
 Link-Belt Co., Nictown (Philadelphia), Pa.  
 Lidgerwood Mfg. Co., New York, N. Y.  
 Males Co., Cincinnati, O.  
 Mead-Morrison Mfg. Co., Cambridge, Mass.  
 Monaghan Machine Co., Chicago, Ill.  
 National Hoisting Engine Co., Harrison, N. J.  
 Novo Engine Co., Lansing, Mich.  
 Smith Co., T. L., Atlanta, Ga.  
 Stroudsburg Engine Works, Stroudsburg, Pa.
- Hoists.**  
**CHAIN.**  
 Ford Chain Block & Mfg. Co., Philadelphia, Pa.  
 Speidel, J. G., Reading, Pa.
- ELECTRIC.**  
 American Hoist & Derrick Co., St. Paul, Minn.  
 Lidgerwood Mfg. Co., New York, N. Y.  
 Monaghan Mch. Co., Chicago, Ill.  
 Northern Engineering Works, Detroit, Mich.  
 Patten Mfg. Co., Chattanooga, Tenn.
- PNEUMATIC MOTORS.**  
 Chicago Pneumatic Tool Co., Chicago, Ill.  
 Ingersoll-Rand Co., New York, N. Y.
- Hoops, Bands, etc. (Galvanized.)**  
 J. C. H. Galvanizing Co., Philadelphia, Pa.  
 McCalla, Harold, Philadelphia, Pa.
- Hoops. (Barrel.)**  
 American Steel & Wire Co., Chicago, Ill.  
 Carnegie Steel Co., Pittsburgh, Pa.
- Hose.**  
 Eureka Fire Hose Mfg. Co., New York, N. Y.  
 N. J. Car Spring & Rubber Co., Jersey City, N. J.
- Hotels.**  
 Emerson Hotel, Baltimore, Md.  
 Hotel Essex, Boston, Mass.
- Hot Water Service Heaters.**  
 Alberger Pump Co., New York, N. Y.
- Hydrants.**  
 Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
 Columbian Iron Works, Chattanooga, Tenn.  
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
 Goulds Mfg. Co., Seneca Falls, N. Y.  
 Kennedy Valve Mfg. Co., Elmira, N. Y.  
 Myers & Bro., F. E., Ashland, O.  
 Pratt & Coady Co., Hartford, Conn.  
 Wood & Co., R. D., Philadelphia, Pa.
- Hydraulic Giants.**  
 American Spiral Pipe Works, Chicago, Ill.
- Hydraulic Rams.**  
 Goulds Mfg. Co., Seneca Falls, N. Y.  
 Rife Engine Co., New York, N. Y.
- Hydrogen.**  
 International Oxygen Co., New York, N. Y.
- Icemaking Machinery and Supplies.**  
 Baltimore Machine Works, Baltimore, Md.  
 Columbus Iron Works Co., Columbus, Ga.  
 Creamery Package Mfg. Co., De Kalb, Ill.  
 Frick Co., The, Waynesboro, Pa.  
 Hagup, John, St. Louis, Mo.  
 Hemington Machine Co., Wilmington, Del.  
 Huemmel-Dawley Mfg. Co., St. Louis, Mo.  
 Taft-Nordmeyer Eng. Co., St. Louis, Mo.  
 Vilter Mfg. Co., Milwaukee, Wis.  
 Vogt Machine Co., Henry, Louisville, Ky.  
 York Mfg. Co., York, Pa.
- Incorporators. (Companies.)**  
 Delaware Trust Co., Wilmington, Del.  
 Sieber & Co., H. F., Philadelphia, Pa.
- Industrial, Agricultural and Commercial Opportunities.**
- CITIES AND TOWNS.**  
 Atlanta, Ga., Ga. Bureau of Indus'y & Imm'gr.  
 Baltimore, Md., Gas & Electric Co.  
 Bedford City, Va., Board of Trade.  
 Newport News, Va., Old Dominion Land Co.  
 Texas City, Tex., Texas City Transportation Co.
- RAILROADS.**  
 Atlanta, Birmingham & Atlantic R. R., Atlanta, Ga.  
 Atlanta & W. Point R. R. Co., Montgomery, Ala.  
 Baltimore & Ohio Railroad, Baltimore, Md.  
 Carolina, Clinchfield & O. Ry., Johnson City, Tenn.  
 Central of Georgia Ry. Co., Savannah, Ga.  
 Florida East Coast Rwy., St. Augustine, Fla.  
 Illinois Central Railroad Co., Chicago, Ill.  
 Norfolk & Western Railway, Roanoke, Va.  
 Seaboard Air Line, Portsmouth, Va.  
 Southern Railway Co., Washington, D. C.  
 Tennessee Central Railroad Co., Cookeville, Tenn.  
 Virginia Railway & Power Co., Richmond, Va.
- Industrial Minerals.**  
 Howard & Co. (Brokers), Savannah, Ga.
- Industrial Track Work. [See Railways, Ind.]**
- Injectors.**  
 Jenkins Bros., New York, N. Y.  
 Sellers & Co., Inc., Wm., Philadelphia, Pa.
- Insulating Materials.**  
 Johns-Manville Co., H. W., New York, N. Y.
- Insurance.**  
 Hartford Fire Insurance Co., Hartford, Conn.  
 Hartford Steam Boiler Inspection & Ins. Co., Hartford, Conn.  
 Maryland Casualty Co., Baltimore, Md.
- Interior Trim. (Metallic.)**  
 Dahlstrom Metallic Door Co., Jamestown, N. Y.
- Iron.**  
 Alabama Coal & Iron Co., Birmingham, Ala.  
 American Rolling Mill Co., Middletown, O.  
 La Belle Iron Works, Steubenville, O.  
 Milton Mfg. Co., Milton, Pa.  
 Oliver Iron & Steel Co., Pittsburgh, Pa.  
 Republic Iron & Steel Co., Youngstown, O.  
 Tennessee Coal, Iron & R. R. Co., B'gm'm, Ala.  
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Irrigation Machinery.**  
 Blakelee Mfg. Co., Du Quoin, Ill.  
 Cameron Steam Pump Wks., A. S., New York, N. Y.
- Journals. (Financial.)**  
 Financial Review, New York, N. Y.

**Kettles.** (Drossing, Tinning, Smelting.)  
Willing Iron Works Co., Millard F., Philadelphia, Pa.

**Kettles.** (Steam Jacket.)  
Badger & Sons Co., E. B., Boston, Mass.  
Petroleum Iron Works Co., Sharon, Pa.

**Key Seater.** (Portable.)  
Burr & Son, John T., Brooklyn, N. Y.

**Knitting Machinery.**  
Acme Knitting Mch. & Needle Co., Franklin, N. H.

**Lacquers.** (All Purposes.)  
Durlacque Mfg. Co., St. Louis, Mo.

**Lamp Posts.** (Electric, Gas.)  
Western Gas Construction Co., Ft. Wayne, Ind.

**Lamps.** (Arc and Incandescent.)  
Columbia Incandescent Lamp Co., St. Louis, Mo.

**Lamps.** (Incandescent Lamp Co., Fostoria, O.)  
General Electric Co., Schenectady, N. Y.

**Le Electric Co., Baltimore, Md.**  
Le Electric Co., Baltimore, Md.

**Le Electric Co., Asheville, N. C.**  
Western Electric Co., New York, N. Y.

**Le Electric Co., New York, N. Y.**  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

**Lands.** (Mineral, Timber, Farm, etc.)  
Barr, J. H. C., Philadelphia, Pa.

**Lands.** (Mineral, Timber, Farm, etc.)  
Fendig & Co., Albert, Brunswick, Ga.

**Lands.** (Mineral, Timber, Farm, etc.)  
Granberg, W. H., New York, N. Y.

**Lands.** (Mineral, Timber, Farm, etc.)  
Kimbrough & Co., J. T., Atlanta, Ga.

**Lands.** (Mineral, Timber, Farm, etc.)  
Whitney, Frank, Savannah, Ga.

**Lath.** (Expanded Metal.)  
Milwaukee Corrugating Co., Milwaukee, Wis.

**Lathes.** (Engine.)  
Greaves, Klusman & Co., Cincinnati, O.

**Lathes.** (Engine.)  
Manning, Maxwell & Moore, Inc., New York, N. Y.

**Lawn Furniture.**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.

**Lawn Furniture.**  
Dufur & Co., Baltimore, Md.

**Lawn Furniture.**  
Dufur, Baggott & Co., Baltimore, Md.

**Leadite.**  
Leadite Co., Inc., The, Philadelphia, Pa.

**Lighting Equipment.**  
Holophane Co., Newark, Ohio.

**Lime.**  
Security Cement & Lime Co., Baltimore, Md.

**Lime.**  
Tidewater Portland Cement Co., Baltimore, Md.

**Lime.** (Hydrated.)  
Security Cement & Lime Co., Baltimore, Md.

**Lime.** (Hydrated.)  
Tidewater Portland Cement Co., Baltimore, Md.

**Limestone Products.**  
Security Cement & Lime Co., Baltimore, Md.

**Liquor Filters.**  
International Filter Co., Chicago, Ill.

**Lithographers, Engravers.**  
Young & Selden Co., Baltimore, Md.

**Loans.**  
Assets Realization Co., Chicago, Ill.

**Lockers.** (Metal.)  
Kelley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

**Locomotives.**  
INDUSTRIAL

**Locomotives.**  
American Locomotive Co., New York, N. Y.

**Locomotives.**  
Baldwin Locomotive Works, The, Philadelphia, Pa.

**Locomotives.**  
Byers Machine Co., John F., Ravenna, O.

**Locomotives.**  
Climax Mfg. Co., Corry, Pa.

**Locomotives.**  
Davenport Locomotive Works, Davenport, Ia.

**Locomotives.**  
Helsler Locomotive Works, Erie, Pa.

**Locomotives.**  
Jeffrey Mfg. Co., Columbus, O.

**Locomotives.**  
Lima Locomotive & Machine Co., Lima, O.

**Locomotives.**  
Males Co., Cincinnati, O.

**Locomotives.**  
Porter Co., H. K., Pittsburgh, Pa.

**Locomotives.**  
Vulcan Iron Works, Wilkes-Barre, Pa.

**Locomotives.**  
RAILWAY

**Locomotives.**  
American Locomotive Co., New York, N. Y.

**Locomotives.**  
Baldwin Locomotive Works, The, Philadelphia, Pa.

**Locomotives.**  
Lima Locomotive & Machine Co., Lima, O.

**Locomotives.**  
Males Co., Cincinnati, O.

**Locomotives.**  
Southern Supply Co., Norfolk, Va.

**Looms and Weaving Machinery.**  
Draper Co., Hopedale, Mass.

**Looms and Weaving Machinery.**  
Mason Machine Works, Taunton, Mass.

**Lubricants.**  
Albany Lubricating Co., New York, N. Y.

**Lubricants.**  
Chester Graphite Co., Chester Springs, Pa.

**Lumber.**  
Industrial Lumber Co., Elizabeth, La.

**Lumber.**  
Massee & Felton Lumber Co., Macon, Ga.

**Lumber.** (Heavy Construction, Pitch Pine, etc.)  
Massee & Felton Lumber Co., Macon, Ga.

**Lumber.** (Heavy Construction, Pitch Pine, etc.)  
National Lumber & Creosote Co., Texarkana, Ark.

**Lumber.** (Heavy Construction, Pitch Pine, etc.)  
Raylor & Co., S. E., Gulfport, Miss.

**Lumber.** (Yellow Pine.)  
Industrial Lumber Co., Elizabeth, La.

**Lumber Buggies.**  
Sole Steam Feed Works, Meridian, Miss.

**Lumber Stackers.**  
Sole Steam Feed Works, Meridian, Miss.

**Machinery.** (Special.)  
Baltimore Machine Works, Baltimore, Md.

**Machinery.** (Special.)  
Bliss Co., E. W., Brooklyn, N. Y.

**Machinery.** (Special.)  
Ellis, Lewis T., Alpena, Mich.

**Machinery.** (Special.)  
Lefter & Co., Charles, Brooklyn, N. Y.

**Machinery.** (Special.)  
Oil City Boiler Co., Oil City, Pa.

**Machinery.** (Special.)  
Rogersford Fdry. & Mch. Wks., Rogersford, Pa.

**Machinery.** (Special.)  
Stratton & Bragg Co., Petersburg, Va.

**Machinery.** (Special.)  
Universal Telegraphic Co., Baltimore, Md.

**Machinery and Supplies.** (New and Second-Hand Bargains.)  
Boston Iron & Metal Co., Baltimore, Md.

**Machinery and Supplies.** (New and Second-Hand Bargains.)  
Chicago House Wrecking Co., Chicago, Ill.

**Machinery and Supplies.** (New and Second-Hand Bargains.)  
Cleveland Belting & Machinery Co., Cleveland, O.

**Machine Tools.**  
Greaves, Klusman & Co., Cincinnati, O.

**Machine Tools.**  
Manning, Maxwell & Moore, Inc., New York, N. Y.

**Machine Tools.**  
Stephens Shaper Co., John, Cincinnati, O.

**Machinists.** (Engineers.)  
American Mch. & Mfg. Co., Charlotte, N. C.

**Machinists.** (Engineers.)  
Roanoke Iron Works, Inc., Roanoke, Va.

**Machinists.** (Engineers.)  
Stratton & Bragg Co., Petersburg, Va.

**Machinists.** (Engineers.)  
Universal Telegraphic Co., Baltimore, Md.

**Magnesia Materials.**  
Johns-Manville Co., H. W., New York, N. Y.

**Magnet Electro.** (For-Cottonseed, Linters and Hullers.)  
Dixie Electro Magnet Co., Memphis, Tenn.

**Magnetic Separators.**  
Paxson Co., J. W., Philadelphia, Pa.

**Mail Chutes.**  
Cutler Mail Chute Co., Rochester, N. Y.

**Mantels.** (Wooden.)  
Northcross Mantel Co., W. J., Memphis, Tenn.

**Marble Work.** (Interior.)  
Dagostin & Angelini Bros., Montgomery, Ala.

**Masonry Dams.**  
Multiple Arch Hydraulic Const. Co., Ltd., Spar-tanburg, S. C.

**Mechanical Draft.**  
American Blower Co., Detroit, Mich.

**Mechanical Draft.**  
Buffalo Steam Pump Co., Buffalo, N. Y.

**Mechanical Draft.**  
Richmond Engr. & Mfg. Co., Richmond, Va.

**Mechanical Draft.**  
Sturtevant Co., B. F., Hyde Park, Mass.

**Metal Ceilings.** [See Ceilings, Metal.]

**Metaline.**  
North Amer. Metaline Co., Long Island City, N. Y.

**Metal Culverts.** [See Culverts.] (Corrugated Metal.)

**Metal Polish.**  
Hoffman, Geo. W., Indianapolis, Ind.

**Metal Shingles.**  
Burriss & Co., John T., Anderson, S. C.

**Metal Shingles.**  
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.

**Metal Shingles.**  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.

**Metal Shingles.**  
Cortright Metal Roofing Co., Philadelphia, Pa.

**Metal Shingles.**  
Edwards Manufacturing Co., Cincinnati, O.

**Metal Shingles.**  
Hyndman Roofing Co., Cincinnati, O.

**Metal Stamping.**  
Parsons Specialty & Mch. Co., Philadelphia, Pa.

**Metal Window Frames and Sashes.**  
Detroit Steel Products Co., Detroit, Mich.

**Metal Work.** (Stamped and Embossed Hotel Checks, Key Tags, etc.)  
American Railway Supply Co., New York, N. Y.

**Metal-Working Machinery.**  
Bertsch & Co., Cambridge City, Ind.

**Metal-Working Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.

**Metal-Working Machinery.**  
Lefter & Co., Charles, Brooklyn, N. Y.

**Metal-Working Machinery.**  
Long & Allstatter Co., Hamilton, O.

**Metal-Working Machinery.**  
Rogersford Fdry. & Mch. Co., Rogersford, Pa.

**Metal-Working Machinery.**  
Stoll Co., D. H., Buffalo, N. Y.

**Micrometers, Calipers, etc.**  
Starrett Co., L. S., Athol, Mass.

**Milk Filters.** (Liquor, Milk, etc.)  
International Filter Co., Chicago, Ill.

**Mill Engineers and Architects.**  
Lockwood, Greene & Co., Boston, Mass.

**Mill Engineers and Architects.**  
Silline, J. E., Greenville, S. C.

**Mill Supplies.**  
Bailey-Lebby Co., Charleston, S. C.

**Mill Supplies.**  
Cameron & Barkley Co., Charleston, S. C.

**Mill Supplies.**  
Gainesville Iron Works, Gainesville, Ga.

**Mill Supplies.**  
Lindsay, J. L., Inc., Richmond, Va.

**Mill Supplies.**  
Lombard Iron Works, Augusta, Ga.

**Mill Supplies.**  
Manning, Maxwell & Moore, Inc., New York, N. Y.

**Mill Supplies.**  
Mecklenburg Iron Works, Charlotte, N. C.

**Mill Supplies.**  
Nordyke & Marmon Co., Indianapolis, Ind.

**Mill Supplies.**  
Reuter-Jones Mfg. Co., St. Louis, Mo.

**Mill Supplies.**  
Salem Foundry & Machine Works, Salem, Va.

**Mill Supplies.**  
Smith-Courtney Co., Richmond, Va.

**Mill Supplies.**  
Starr Co., B. F., Baltimore, Md.

**Mill Supplies.**  
Stratton & Bragg Co., Petersburg, Va.

**Mill Supplies.**  
Ward-Becke Co., Washington, D. C.

**Mill Supplies.**  
Wolf Co., Chambersburg, Pa.

**Mining Machinery.** (Gold, Copper, Plate, etc.)  
Bartlett & Snow Co., C. O., Cleveland, O.

**Mining Machinery.** (Gold, Copper, Plate, etc.)  
Jeffrey Mfg. Co., Columbus, O.

**Mining Machinery.** (Gold, Copper, Plate, etc.)  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

**Mining Machinery.** (Gold, Copper, Plate, etc.)  
Mecklenburg Iron Works, Charlotte, N. C.

**Mining Machinery.** (Gold, Copper, Plate, etc.)  
Power & Mining Machinery Co., Cudahy, Wis.

**Mining Machinery.** (Gold, Copper, Plate, etc.)  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Mixer Machinery.**  
Smith Co., T. L., Atlanta, Ga.

**Mixing Machinery.**  
Dunning, W. D., Syracuse, N. Y.

**Mixing Machinery.**  
Lynn-Superior Co., The, Cincinnati, O.

**Mortar Colors.**  
Chattanooga Paint Co., Chattanooga, Tenn.

**Motor Trucks.**  
International Motor Co., New York, N. Y.

**Mouldings, Casings, etc.**  
Massee & Felton Lumber Co., Macon, Ga.

**Nails and Spikes.**  
American Steel & Wire Co., Chicago, Ill.

**Nails and Spikes.**  
Republic Iron & Steel Co., Youngstown, O.

**Nails and Spikes.**  
Youngstown Sheet & Tube Co., Youngstown, O.

**Nitre Pots, Eggs.**  
Pratt Engineering & Mach. Co., Atlanta, Ga.

**Nuts.** [See Bolts, Nuts, Rivets, etc.]

**Nut Locks.** (Railroad.)  
Universal Nut & Bolt Lock Co., Newport, Ky.

**Office Furniture.**  
Ruse & Thompson, Baltimore, Md.

**Oil.** (Lubricating, etc.)  
Albany Lubricating Co., New York, N. Y.

**Oil-Burning Appliances.**  
Petroleum Iron Works Co., Sharon, Pa.

**Oil Cans.**  
Wall Mfg. Supply Co., P., Allegheny, Pa.

**Oil Engines.** [See Engines (Oil).]

**Oil Separators.**  
Stewart Heater Co., Buffalo, N. Y.

**Oil Stones.**  
Carborundum Co., Niagara Falls, N. Y.

**Oil Stones.**  
Norton Co., Worcester, Mass.

**Oil-Well Machinery.**  
Keystone Steam Well Mach. Co., Beaver Falls, Pa.

**Oil-Well Machinery.**  
Williams Bros., Ithaca, N. Y.

**Ornamental Iron Work.**  
Belmont Iron Works, Philadelphia, Pa.

**Ornamental Iron Work.**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.

**Ornamental Iron Work.**  
Chattanooga Iron & Wire Wks., Chat'n'ga, Tenn.

**Ornamental Iron Work.**  
Chesapeake Iron Works, Baltimore, Md.

**Ornamental Iron Work.**  
Dow Wire and Iron Works, Louisville, Ky.

**Ornamental Iron Work.**  
Ohio Elevator & Machine Co., The, Columbus, O.

**Ornamental Iron Work.**  
Roanoke Iron Works, Inc., Roanoke, Va.

**Ornamental Iron Work.**  
Schreiber & Sons Co., The, Cincinnati, O.

**Ornamental Iron Work.**  
Snead Architectural Iron Works, Louisville, Ky.

**Ornamental Iron Work.**  
Southern Wire & Iron Mfg. Co., Dallas, Tex.

**Oxy-Acetylene Welding and Cutting Outfit and Supplies.**  
International Oxygen Co., New York, N. Y.

**Oxygen.**  
International Oxygen Co., New York, N. Y.

**Packing.** (Asbestos, Metallic, Rubber, Leather, etc.)  
Jenkins Bros., New York, N. Y.

**Packing.** (Asbestos, Metallic, Rubber, Leather, etc.)  
Johns-Manville Co., H. W., New York, N. Y.

**Packing.** (Asbestos, Metallic, Rubber, Leather, etc.)  
N. J. Car Spring & Rubber Co., Jersey City, N. J.

**Packing.** (Asbestos, Metallic, Rubber, Leather, etc.)  
Power Specialty Co., New York, N. Y.

**Paint.** (Bridge.)  
Dixon Crucible Co., Jos., Jersey City, N. J.

**Paint.** (Bridge.)  
National Roofing Co., Tonawanda, N. Y.

**Paint.** (Cold Water.)  
Wilhelm Co., A., New York, N. Y.

**Paint.** (Metal Preservative.)  
National Roofing Co., Tonawanda, N. Y.

**Paint.** (Metal Preservative.)  
Wilhelm Co., A., New York, N. Y.

**Paint.** (Roofing, Building, etc.)  
Armstrong Mfg. Co., The, Richmond, Va.

**Paint.** (Roofing, Building, etc.)  
Berlin Mills Co., Portland, Maine.

**Paint.** (Roofing, Building, etc.)  
Cameron & Barkley Co., Charleston, S. C.

**Paint.** (Roofing, Building, etc.)  
Chattanooga Paint Co., Chattanooga, Tenn.

**Paint.** (Roofing, Building, etc.)  
Dixon Crucible Co., Jos., Jersey City, N. J.

**Paint.** (Roofing, Building, etc.)  
National Roofing Co., Tonawanda, N. Y.

**Paint.** (Roofing, Building, etc.)  
Standard Paint Co., New York, N. Y.

**Paint.** (Roofing, Building, etc.)  
Thompson & Co., Pittsburgh, Pa.

**Paint.** (Roofing, Building, etc.)  
Wilhelm Co., A., New York, N. Y.

**Painting.** (Contractors for Bridges, Buildings, etc.)  
Dinaco & Bro., A., Pittsburgh, Pa.

**Paint-Making Machinery.**  
Lynn Superior Co., The, Cincinnati, O.

**Paper.** (Roofing, Building, Sheeting, etc.)  
Armstrong Mfg. Co., Richmond, Va.

**Paper.** (Roofing, Building, Sheeting, etc.)  
Bartlett Mfg. Co., Philadelphia, Pa.

**Paper.** (Roofing, Building, Sheeting, etc.)  
Cameron & Barkley Co., Charleston, S. C.

**Paper.** (Roofing, Building, Sheeting, etc.)  
Standard Roofing Co., Tulsa, Okla.

**Paper.** (Wrapping.)  
Berlin Mills Co., Portland, Maine.

**Patent Attorneys.**  
Brown, Eugene C., Washington, D. C.

**Patent Attorneys.**  
Chandler & Chandler, Washington, D. C.

**Patent Attorneys.**  
Evans & Co., Victor J., Washington, D. C.

**Patent Attorneys.**  
Jones, Bennett S., Washington, D. C.

**Patterns.**  
Roanoke Iron Works, Inc., Roanoke, Va.

**Pavement Filler.**  
Barrett Mfg. Co., Philadelphia, Pa.



- Presses.** (Balling, Cottonseed Oil, etc., Hydraulic and Power.)  
Boomer & Boschert Press Co., Syracuse, N. Y.  
Cardwell Machine Co., Richmond, Va.  
Continental Gln Co., Birmingham, Ala.
- Presses.** (Sewer Pipe and Tile.)  
Taplin-Rice-Clerkin Co., Akron, O.
- Presses.** (Stamping.)  
Bliss Co., E. W., Brooklyn, N. Y.  
Lester Co., Charles, Brooklyn, N. Y.  
Stoll Co., D. H., Buffalo, N. Y.
- Preventive for Sap Stain.**  
Church & Dwight Co., New York, N. Y.
- Printers.** (Book, Catalog, Job, etc.)  
Fleet-McGinley Co., Baltimore, Md.
- Promoters.**  
Assets Realization Co., Chicago, Ill.  
Electric Bond & Share Co., New York, N. Y.
- Protector Steel.** (Concrete Curb, Steps, etc.)  
Steel Protected Concrete Co., Philadelphia, Pa.
- Pulleys.** (Friction Clutch.)  
Brown Co., A. & F., New York, N. Y.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Cresson Co., Geo. V., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Poole Engineering & Machine Co., Baltimore, Md.  
Sinclair-Scott Co., Baltimore, Md.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- STEEL SPLIT.**  
American Pulley Co., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.
- WOOD SPLIT.**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Lane Mfg. Co., Montpelier, Vt.  
Saginaw Mfg. Co., Saginaw, Mich.  
Salem Foundry & Machine Works, Salem, Va.
- Pulleys, Shafting and Hangers.**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Cresson Co., Geo. V., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Nordyke & Marmon Co., Indianapolis, Ind.  
Poole Engineering & Machine Co., Baltimore, Md.  
Standard Roller Bearing Co., Philadelphia, Pa.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pumps.** (Centrifugal.)  
Alberger Pump Co., New York, N. Y.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
Erie Pump & Engine Works, Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Haydon Pump Co., Quincy, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
Novo Engine Co., Lansing, Mich.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Deep Well.)  
McGowan Co., John H., Cincinnati, O.
- Pumps.** (Hydraulic.)  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cardwell Machine Co., Richmond, Va.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Erie Pump & Engine Works, Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Lift and Force.)  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Odorous and Excavating.)  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Pneumatic.)  
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Roller Feed.)  
Alberger Pump Co., New York, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
McGowan Co., John H., Cincinnati, O.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Myers & Bros., F. E., Ashland, O.  
Union Steam Pump Co., Battle Creek, Mich.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Rotary.)  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Steam.)  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Dean Steam Pump Co., Holyoke, Mass.  
Gardner Governor Co., Quincy, Ill.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
McGowan Co., John H., Cincinnati, O.  
Murray Iron Works Co., Burlington, Ia.  
Price Machinery Co., S. M., Norfolk, Va.  
Sydney Pump & Well Co., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Trench.)  
Bond Co., Harold L., Boston, Mass.  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Vacuum.)  
Alberger Pump Co., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Smith Co., T. L., Atlanta, Ga.  
Union Steam Pump Co., Battle Creek, Mich.
- Pumps.** (Water-works.)  
McGowan Co., John H., Cincinnati, O.
- Pumping Machinery.**  
Allis-Chalmers Co., Milwaukee, Wis.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Bond Co., Harold L., Boston, Mass.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Dean Steam Pump Co., Holyoke, Mass.  
Deming Co., Salem, O.  
Erie Pump & Engine Works, Erie, Pa.  
Fairbanks, Morse & Co., Chicago, Ill.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
McGowan Co., John H., Cincinnati, O.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Morris Machine Works, Baldwinville, N. Y.
- Myers & Bros., F. E., Ashland, O.**  
Norfolk Engineering Co., Philadelphia, Pa.  
Snyder Pump & Well Co., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, H. R., New York, N. Y.
- Punching and Shearing Machinery.**  
Bertsch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.  
Long & Allstatler Co., Hamilton, O.  
Roversford Foundry & Mach. Co., Roversford, Pa.
- Pyrites Burners.**  
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Quarrying and Stonecutting Machinery.**  
Ingersoll-Rand Co., New York, N. Y.
- Railings, Grilles, etc. (Brass.)**  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Railroads.** (Agricultural and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]
- Railroad Equipment and Supplies.** (New and Second-hand.)  
American Frog & Switch Co., Hamilton, O.  
American Locomotive Co., New York, N. Y.  
American Valve & Meter Co., Cincinnati, O.  
Bailey-Lebby Co., The, Charleston, S. C.  
Baldwin Equipment & Supply Co., Chicago, Ill.  
Benjamin Equip. Co., Harry, St. Louis, Mo.  
Birmingham Rail & Loco. Co., Birmingham, Ala.  
Boston Iron & Metal Co., Baltimore, Md.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Foster Co., L. B., Pittsburgh, Pa.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hoffman & Co., R. C., Baltimore, Md.  
Hyman-Michaels Co., Chicago, Ill.  
Indiana Steel & Iron Co., Pittsburgh, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Macleary, J. H., Suffolk, Va.  
Males Co., Cincinnati, O.  
Manning, Maxwell & Co., Inc., New York, N. Y.  
Maryland Equipment & Supply Co., Baltimore, Md.  
Mathes Iron & Metal Co., G. St. Louis, Mo.  
May & Turner Co., Atlanta, Ga.  
National Iron & Steel Co., Houston, Tex.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Papin Co., R. K., St. Louis, Mo.  
Pickett Co., Inc., H. W., Philadelphia, Pa.  
Q & C Co., New York, N. Y.  
Read Co., Howard W., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Smith-Courtney Co., Richmond, Va.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Southern Supply Co., Norfolk, Va.  
Steel Rail Supply Co., The, New York, N. Y.  
United States Steel Co., Cumberland, Md.  
Vulcan Iron Works, Wilkes-Barre, Pa.  
Weir Frog Co., Cincinnati, O.  
West Virginia Rail Co., The, Huntington, W. Va.  
Wilson & Co., E. H., Philadelphia, Pa.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**  
American Frog & Switch Co., Hamilton, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Mathes Iron & Metal Co., G. St. Louis, Mo.  
May & Turner Co., Atlanta, Ga.  
Robinson & Orr, Pittsburgh, Pa.  
Sweet's Steel Co., Williamsport, Pa.  
Weir Frog Co., Cincinnati, O.
- Railroad Tie.** (Reinforced Concrete.)  
Universal Concrete Tie Co., New Orleans, La.
- Rails.** (Steel.)  
Baldwin Equipment & Supply Co., Chicago, Ill.  
Carnegie Steel Co., Pittsburgh, Pa.  
Foster Co., L. B., Pittsburgh, Pa.  
Franks, J. E., Atlanta, Ga.  
Hoffman & Co., R. C., Baltimore, Md.  
Hyde Bros. & Co., Pittsburgh, Pa.  
Hyman-Michaels Co., Chicago, Ill.  
Indiana Steel & Iron Co., Pittsburgh, Pa.  
Levis & Co., Henry, Philadelphia, Pa.  
Macleary, J. H., Suffolk, Va.  
Mathes Iron & Metal Co., G. St. Louis, Mo.  
May & Turner Co., Atlanta, Ga.  
National Iron & Steel Co., Houston, Tex.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Papin Co., R. K., St. Louis, Mo.  
Republie Iron & Steel Co., Youngstown, O.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.  
United States Steel Co., Cumberland, Md.  
West Virginia Rail Co., The, Huntington, W. Va.  
Wilson & Co., E. H., Philadelphia, Pa.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Rail Braces, Crossings, etc.** [See R. R. Frogs and Switches.]
- Rail Joints.**  
Q & C Co., New York, N. Y.
- Railways.** (Industrial.)  
Chase, Fdry. & Mfg. Co., Columbus, O.  
Hunt Co., C. W., West New Brighton, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Rams.** (Hydraulic.) [See Hydraulic Rams.]
- Reamers.**  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reflectors.**  
Holophane Co., Newark, Ohio.
- Reinforcing Bars.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Concrete-Steel Co., New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Franklin Steel Co., Franklin, Pa.
- Repairing.** (Power Plants.)  
Strickland Mch. Co., Richmond, Va.
- Riveters.** (Pneumatic.)  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Independent Pneumatic Tool Co., Chicago, Ill.  
Ingersoll-Rand Co., New York, N. Y.
- Road Machinery.**  
Austin-Western Co., Ltd., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.  
Gallon Iron Works Co., Gallon, O.  
Iroquois Iron Works, Buffalo, N. Y.  
Kelly Springfield Road Roller Co., Springfield, O.  
Syracuse Chilled Plow Co., Syracuse, N. Y.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheeled Scraper Co., Aurora, Ill.
- Roadmaking Materials.**  
Standard Oil Co., Inc., Newark, N. J.  
Texas Co., The, New York, N. Y.
- Road Roller.** (Steam.)  
Austin-Western Co., Ltd., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.  
Iroquois Iron Works, Buffalo, N. Y.  
Kelly Springfield Road Roller Co., Springfield, O.  
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**  
Gulf Refining Co., Pittsburgh, Pa.  
Prime White Road Oil Co., Cincinnati, O.  
Standard Oil Co., Inc., Newark, N. J.  
Texas Co., The, New York, N. Y.
- Road Plows.**  
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.  
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Road Preservatives.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
Texas Co., The, New York, N. Y.
- Rock Crushers.** [See Crushers, Rock.]
- Roll Grinding and Corrugating.** (Flour Mills.)  
Veatch & Co., L. R., Louisville, Ky.
- Rolls.** (Bending and Straightening.)  
Bertsch & Co., Cambridge City, Ind.
- Roofers' and Tinners' Supplies.**  
Merchant & Evans Co., Philadelphia, Pa.
- Roofing.** (Contractors for Laying.)  
Dinaco & Bro., A., Pittsburgh, Pa.
- Roofing.** (Felt, Tar, Asbestos, Asphalt, Tin, etc.)  
Allen, Herbert F. L., Washington, D. C.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Armstrong Mfg. Co., Richmond, Va.  
Asphalt Ready Roofing Co., New York, N. Y.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
John-Manville Co., H. W., New York, N. Y.  
National Roofing Co., Tonawanda, N. Y.  
Standard Paint Co., New York, N. Y.  
Standard Roofing Co., Tulsa, Okla.
- Roofing.** (Metal Shingles.) [See Shingles, Metal.]  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing.** (Slate.)  
East Bangor Consol. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Hower, J. K., Slatington, Pa.  
Johnson, E. J., New York, N. Y.  
Reynolds Asphalt Shingle Co., H. M., Grand Rapids, Mich.
- Roofing Tile.**  
National Roofing Tile Co., Lima, O.
- Roofing and Siding.** (Metal.)  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Amoner & Barkley Co., Charleston, S. C.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Milwaukee Corrugating Co., Milwaukee, Wis.  
New Orleans Rfg. & Metal Wks., New Orleans, La.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope.**  
American Mfg. Co., New York, N. Y.  
Broderick & Bascom, Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
International Cotton Mills Corp., New York, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.
- Rope.** (Transmission and Hoisting.)  
American Mfg. Co., New York, N. Y.  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Columbian Rope Co., Auburn, N. Y.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Hunt Co., C. W., West New Brighton, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Drives.**  
Brown Co., A. & F., New York, N. Y.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son, H. W., Chicago, Ill.  
Cresson Co., Geo. V., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Hunt Co., C. W., West New Brighton, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Machinery.**  
Haskell-Dawes Machine Co., Boston, Mass.
- Rubber Goods.**  
Eureka Fire Hose Mfg. Co., New York, N. Y.  
New Jersey Car Sp'g & Rub. Co., Jersey City, N. J.
- Rules.** (Steel.)  
Lufkin Rule Co., Saginaw, Mich.  
Starratt Co., L. S., Athol, Mass.
- Safes and Vaults.**  
York Safe & Lock Co., York, Pa.
- Safety Appliances.** (For Elevator.)  
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Sand.**  
Arundel Sand & Gravel Co., Baltimore, Md.  
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.  
Lathrop & Co., C. F., Richmond, Va.
- Sand Rammers.**  
Chicago Pneumatic Tool Co., Chicago, Ill.
- Sap Stain Preventive.**  
Church & Dwight Co., New York, N. Y.
- Sash Chain.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**  
Gerlack Co., Peter, Cleveland, O.  
Hutter Bros. Saw Mfg. Co., Rochester, N. Y.  
Smith Machine Co., H. B., Smithville, N. J.  
Snyder Pump & Well Co., Richmond, Va.
- Saws.** (Band.)  
Smith Machine Co., H. B., Smithville, N. J.
- Saws.** (Hack.)  
Starratt Co., L. S., Athol, Mass.
- Sawmill Dogs.**  
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**  
Gainesville Iron Works, Gainesville, Ga.  
Gibbs Machinery Co., Columbia, S. C.
- Sawmill Machinery.**  
Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Chase Turbine Mfg. Co., Orange, Mass.  
Lane Mfg. Co., Montpelier, Vt.  
Mecklenburg Iron Works, Charlotte, N. C.  
Price Mch. Co., S. M., Norfolk, Va.  
Schofield's Sons Co., J. S., Macon, Ga.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Snyder Pump & Well Co., Richmond, Va.  
Union Iron Works Co., Selma, Ala.
- Saw Sharpeners.**  
Abrasive Material Co., Philadelphia, Pa.  
Carborundum Co., Niagara Falls, N. Y.  
Norton Co., Worcester, Mass.  
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files.** (Cotton Gln.)  
Carver Cotton Gln Co., East Bridgewater, Mass.
- Scales.**  
Howe Scale Co., New York, N. Y.  
Rome Scale & Mfg. Co., Rome, Ga.  
Standard Scale & Supply Co., Pittsburgh, Pa.
- Screening Apparatus.**  
Walker & Elliott, Wilmington, Del.
- Screens.** (Fly, Window and Door.)  
Cincinnati Mfg. Co., Cincinnati, O.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens.** (Mining.)  
Cresson Co., Geo. V., Philadelphia, Pa.  
Cross Engineering Co., Carbondale, Pa.  
Erie Perforating Co., Rochester, N. Y.  
Heudrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
Mundt & Sons, Charles, Jersey City, N. J.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Taplin-Rice-Clerkin Co., Akron, O.
- Searchlights.**  
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators.** (Dust.)  
Buffalo Forge Co., Buffalo, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Sewer Pipe Machinery.**  
Taplin-Rice-Clerkin Co., Akron, O.
- Sewer Pipe.** (Vitrified.)  
Bibb Sewer Pipe Co., Macon, Ga.  
Cannelton Sewer Pipe Co., Cannelton, Ind.  
Pittsburgh-Buffalo Co., Pittsburgh, Pa.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Stevens Sons Co., H., Macon, Ga.
- Shades.**  
Holophane Co., Newark, Ohio.
- Shafting.** (Polished Steel.)  
Field & Co., Inc., Philadelphia, Pa.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.
- Shafting.** (See Pulleys, Shafting and Hangers.)
- Shapers.**  
Stephens Shaper Co., John, Cincinnati, O.
- Sharpening Stones.**  
Norton Co., Worcester, Mass.  
Vitrified Wheel Co., Westfield, Mass.
- Shears.** (Metal.)  
Bertsch & Co., Cambridge City, Ind.  
Rogersford Foundry & Mach. Co., Roversford, Pa.  
Stoll Co., D. H., Buffalo, N. Y.
- Sheet Brass and Copper.**  
Hussey & Co., C. G., Pittsburgh, Pa.  
Merchant & Evans Co., Philadelphia, Pa.
- Sheet Metal Working Machinery.**  
Bertsch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Le Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Shingles.** (Asphalt Slate.)  
Reynolds Asphalt Shingle Co., H. M., Grand Rapids, Mich.
- Shingles.** (Metal.)  
Burris & Co., John T., Anderson, S. C.  
Chattanooga Rfg. & Fdy. Co., Chattanooga, Tenn.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Shredders.** (Bark, Chip, etc.)  
Williams Pat. Crush. & Pul. Co., The, Chicago, Ill.
- Shutters.** (Iron.)  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.
- Shutters.** (Steel Rolling.)  
Kinneer Mfg. Co., Columbus, O.
- Shutters.** (Tin Clad.)  
Victor Mfg. Co., Newburyport, Mass.
- Signs.** (Metal Lithographed.)  
Southern Can Co., Baltimore, Md.
- Signs.** (Road, Street, Outdoor, Advt.)  
Indestructible Sign Co., Columbus, O.
- Skylights and Cornices.**  
Milwaukee Corrugating Co., Milwaukee, Wis.  
New Orleans Rfg. & Metal Wks., New Orleans, La.
- Slate Roofing.** [See Roofing (Slate).]
- Slate.** (Structural, Sanitary, etc.)  
East Bangor Consol. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Hower, J. K., Slatington, Pa.
- Sluice Gates and Appliances.**  
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks.** (Iron and Steel.)  
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Petroleum Iron Works Co., Sharna, Pa.  
Ruemmel-Dawley Mfg. Co., St. Louis, Mo.  
Schofield's Sons Co., J. S., Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Smokestacks.** (Steel-Concrete.)  
Weber Chimney Co., Chicago, Ill.

- Spikes. (Railroad.)**  
Hoffman & Co., R. C., Baltimore, Md.  
West Virginia Rail Co., The, Huntington, W. Va.
- Spikes. [See Nails and Spikes.]**
- Springs. (Machinery. Railway, Spiral.)**  
American Steel & Wire Co., Chicago, Ill.  
Cary Spring Works, New York, N. Y.  
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinklers. (Automatic.)**  
General Fire Extinguisher Co., Providence, R. I.
- Sprinkler Systems. (Automatic.)**  
General Fire Extinguisher Co., Providence, R. I.
- Stamp Mills.**  
Mecklenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**  
Baltimore Office Supply Co., Baltimore, Md.  
Bennett Rubber Stamp & Seal Co., Atlanta, Ga.
- Standpipes.**  
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
Bartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Petroleum Iron Works Co., Sharon, Pa.  
Baumell-Dawley Mfg. Co., St. Louis, Mo.
- Stapling Machinery. (Fruit Package Basket, etc.)**  
Marzac Machine Co., St. Joseph, Mich.
- Stationers. (Envelopes, Letter and Bills Heads, etc.)**  
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**  
Soud Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**  
Saunders' Sons, D., Yonkers, N. Y.
- Steam Heating.**  
Keeler Co., E., Williamsport, Pa.  
Peck-Hammond Co., The, Cincinnati, O.
- Steamship Lines.**  
Baltimore Steam Packet Co., Baltimore, Md.  
Chesapeake Steamship Co., Baltimore, Md.  
Merchant & Miners' Trans. Co., Baltimore, Md.
- Steam Separators.**  
Hopes Mfg. Co., Springfield, O.  
Lindstrom's Mach. Wks., John T., Allentown, Pa.
- Steam Shovel Chains.**  
Weimer Chain & Iron Co., Lebanon, Pa.
- Steam Shovels. [See Excavating Machinery.]**
- Steam Specialties.**  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
Powell Co., Wm., Cincinnati, O.
- Steam Traps.**  
American Blower Co., Detroit, Mich.  
Jenkins Bros., New York, N. Y.  
Lindstrom's Mach. Wks., John T., Allentown, Pa.  
Pratt & Coady Co., Hartford, Conn.
- Steel.**  
American Rolling Mill Co., Middletown, O.  
Dietrich Bros., Baltimore, Md.  
Field & Co., Inc., Philadelphia, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Oliver Iron & Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Steel. (Tool.)**  
Field & Co., Inc., Philadelphia, Pa.  
Jenops & Sons, Inc., Wm., St. Louis, Mo.
- Steel. (Vanadium.)**  
Carnegie Steel Co., Pittsburgh, Pa.
- Steel Buildings. (Designers, Builders.)**  
Amer. Bridge Co. of New York, New York, N. Y.  
Champion Bridge Co., Wilmington, Ohio.  
Chesapeake Iron Works, Baltimore, Md.  
Faris Bridge Co., Pittsburgh, Pa.  
Phoenix Iron Co., Philadelphia, Pa.  
Roanoke Bridge Co., Roanoke, Va.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Steel Casting.**  
Arme Steel & Malleable Iron Wks., Buffalo, N. Y.  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Bellance Steel Casting Co., Pittsburgh, Pa.
- Steel Plate Work.**  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
Hoffman & Co., R. C., Baltimore, Md.  
Phoenix Iron Co., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Richmond Engr. & Mfg. Co., Richmond, Va.  
Baumell-Dawley Mfg. Co., St. Louis, Mo.
- Steel Protector. (Concrete Curb Steps, etc.) [See Protector Steel.]**
- Steel Sheet Piling.**  
Jones & Laughlin Steel Co., Pittsburgh, Pa.
- Stencils.**  
Baltimore Office Supply Co., Baltimore, Md.
- Stirrups. (Building.)**  
Chesapeake Iron Works, Baltimore, Md.
- Stock Certificates, Bonds and Seals.**  
Baltimore Office Supply Co., Baltimore, Md.
- Stokers. (Mechanical.)**  
Babcock & Wilcox Co., New York, N. Y.  
Harrisburg Fdry. & Mach. Wks., Harrisburg, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.
- Storage Batteries.**  
Edison Storage Battery Co., Orange, N. J.  
New Storage Battery Co., The, Philadelphia, Pa.  
Lee Electric Co., Baltimore, Md.  
Westinghouse Machine Co., Pittsburgh, Pa.
- Strainers.**  
Gameron Steam Pump Wks., A. S., New York, N. Y.
- Structural Steel and Iron.**  
Amer. Bridge Co. of New York, New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Carnegie Steel Co., Pittsburgh, Pa.  
Champion Bridge Co., Wilmington, Ohio.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dietrich Bros., Baltimore, Md.
- Hoffman & Co., R. C., Baltimore, Md.**  
**Jones & Laughlin Steel Co., Pittsburgh, Pa.**  
**Memphis Bridge Co., Memphis, Tenn.**  
**Phoenix Iron Co., Philadelphia, Pa.**  
**Republic Iron & Steel Co., Youngstown, O.**  
**Roanoke Bridge Co., Roanoke, Va.**  
**Schreiber & Sons Co., The L., Cincinnati, O.**  
**Snead Architectural Iron Works, Louisville, Ky.**  
**Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.**  
**Virginia Bridge & Iron Co., Roanoke, Va.**  
**York Bridge Co., York, Pa.**
- Stump Pullers.**  
Zimmerman Steel Co., M. R., Lone Tree, Ia.
- Sugar-Mill Machinery.**  
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Sulphur.**  
Union Sulphur Co., New York, N. Y.
- Super-Heaters. (Steam.)**  
Babcock & Wilcox Co., New York, N. Y.  
Power Specialty Co., New York, N. Y.
- Surveying Instruments.**  
Keuffel & Esser, Hoboken, N. J.  
Weber & Co., F., Philadelphia, Pa.
- Switchboards, Switches, etc.**  
Engberg's Elect. & Mech. Wks., St. Joseph, Mich.  
Fort Wayne Electric Works, Fort Wayne, Ind.  
General Electric Co., Schenectady, N. Y.  
Westinghouse Elect. & Mfg. Co., Pittsburgh, Pa.
- Switches. [See Railroad Frogs and Switches.]**
- Switchstands.**  
American Valve & Meter Co., Cincinnati, O.  
Weir Frog Co., Cincinnati, O.
- Tackle Blocks. (For Wire or Manila Rope.)**  
Patterson Co., W. W., Pittsburgh, Pa.
- Tanks. (Iron and Steel.)**  
American Water Softener Co., Philadelphia, Pa.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Case Threshing Mach. Co., Inc., J. I., Racine, Wis.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Gem City Boiler Co., Dayton, O.  
Harry Bros. Co., Newport, Ky.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
New Orleans Rfg. & Met. Wks., New Orleans, La.  
Oil City Boiler Co., Oil City, Pa.  
Petroleum Iron Works, Sharon, Pa.  
Baumell-Dawley Mfg. Co., St. Louis, Mo.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.  
Schofield's Sons Co., J. S., Macon, Ga.  
Sydnor Pump & Well Co., Richmond, Va.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Walsh & Weldner Boiler Co., Chattanooga, Tenn.
- Tanks. (Wood.)**  
Baltimore Cooperage Co., Baltimore, Md.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. E., Ala., Fla.  
Sydnor Pump & Well Co., Richmond, Va.
- Tapes. (Measuring.)**  
Keuffel & Esser, Hoboken, N. J.  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.
- Telephones. (Supplies, Equipment.)**  
Piedmont Electric Co., Asheville, N. C.  
Western Electric Co., New York, N. Y.
- Telephone Cable.**  
Western Electric Co., New York, N. Y.
- Telephone Poles. [See Cross-ties.]**  
Intern'l. Cre. & Constr. Co., Galveston, Tex.  
Western Electric Co., New York, N. Y.
- Terro-cotta.**  
Atlanta Terra-Cotta Co., Atlanta, Ga.  
Bibb Sewer Pipe Co., Macon, Ga.  
Maryland Terra-Cotta Co., Baltimore, Md.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Building Material Co., Norfolk, Va.  
Stevens' Sons Co., H., Macon, Ga.
- Threshers.**  
Cardwell Machine Co., Richmond, Va.  
Case Threshing Mach. Co., Inc., J. I., Racine, Wis.
- Tie Plates. (Railways.)**  
Virginia Railway Supply Co., Norfolk, Va.
- Tile. (Drain, Floor, etc.)**  
Amer. Enam. Brick & Tile Co., New York, N. Y.  
Bibb Sewer Pipe Co., Macon, Ga.  
Oconee Brick & Tile Co., Milledgeville, Ga.
- Tile. (Mosaic.)**  
Dagostin & Angelini Bros., Montgomery, Ala.
- Tile. (Roofing.)**  
National Roofing Tile Co., Lima, O.
- Tin and Terne Plates.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Merchant & Evans Co., Philadelphia, Pa.
- Tobacco Machinery.**  
Buckeye Iron & Brass Works, Dayton, O.  
Cardwell Machine Co., Richmond, Va.
- Tool Steels.**  
Jenops & Sons, Inc., Wm., St. Louis, Mo.
- Tools. (Machinists').**  
Manning, Maxwell & Moore, Inc., New York, N. Y.  
Morse Twist Drill & Mach. Co., New Bedford, Mass.
- Tools. (Mechanical.)**  
Starrett Co., L. S., Athol, Mass.
- Tools. (Pneumatic.)**  
Amer. Compressor & Pump Co., Baltimore, Md.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Independent Pneumatic Tool Co., Chicago, Ill.  
Ingersoll-Rand Co., New York, N. Y.
- Torches.**  
Wall Mfg. Supply Co., F., Allegheny, Pa.
- Towers. (Steel and Wood.)**  
Baltimore Cooperage Co., Baltimore, Md.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.
- Traction Engines.**  
Case Threshing Mach. Co., Inc., J. I., Racine, Wis.  
International Harvester Co. of America, Chicago, Illinois.  
Quincy Engine Co., Quincy, Pa.
- Tramway. (Overhead.)**  
Northern Engineering Works, Detroit, Mich.  
Speidel, J. G., Reading, Pa.
- Tramway. (Wire Rope.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Transformers.**  
Crocker-Wheeler Co., Ampere, N. J.  
Moloney Electric Co., St. Louis, Mo.  
Triumph Electric Co., Cincinnati, O.
- Transmission Line Supplies. (Electric.)**  
Electrical Engineers' Equip. Co., Chicago, Ill.
- Trench Excavator.**  
Fairbanks Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.
- Trucks. (Motor.)**  
International Motor Co., New York, N. Y.
- Trucks. (Platform, Freight, Mill, Factory, etc.)**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Howe Scale Co., New York, N. Y.  
Rome Scale & Mfg. Co., Rome, Ga.
- Trucks. (Storage Battery Auto.)**  
Westinghouse Machine Co., Pittsburgh, Pa.
- Trust Companies. [See Bankers and Brokers.]**
- Tube Well Strainers.**  
Cook Well Co., St. Louis, Mo.
- Tubes. (Boiler.)**  
Cincinnati Iron & Steel Co., Cincinnati, O.  
National Tube Co., Pittsburgh, Pa.
- Tubing.**  
Field & Co., Inc., Philadelphia, Pa.  
La Belle Iron Works, Steubenville, O.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Turbines. (Hydraulic.)**  
Allis-Chalmers Co., Milwaukee, Wis.  
Davis Foundry & Machine Works, Rome, Ga.  
Lefel & Co., James, Springfield, O.  
Poele Engineering & Mach. Co., Baltimore, Md.  
Smith Co., S. Morgan, York, Pa.
- Turbines. (Steam.)**  
Allis-Chalmers Co., Milwaukee, Wis.  
De Laval Steam Turbine Co., Trenton, N. J.  
Ft. Wayne Electric Works, Ft. Wayne, Ind.  
General Electric Co., Schenectady, N. Y.  
Southwark Fdry. & Mch. Co., Philadelphia, Pa.  
Terry Steam Turbine Co., New York, N. Y.  
Western Electric Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.
- Turntables.**  
Virginia Bridge & Iron Co., Roanoke, Va.
- Tuyeres. (Copper and Bronze.)**  
Keystone Bronze Co., Pittsburgh, Pa.
- Twine.**  
American Manufacturing Co., New York, N. Y.  
Columbian Rope Co., Auburn, N. Y.  
International Cotton Mills Corp., New York, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.
- Twine Machinery.**  
Haskell-Dawes Machine Co., Boston, Mass.
- Twisting Machinery.**  
Haskell-Dawes Machine Co., Boston, Mass.
- Unions.**  
Dart Manufacturing Co., E. M., Providence, R. I.
- Vacuum Cleaning Apparatus.**  
Blaisdell Machinery Co., Bradford, Pa.
- Valves.**  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Columbian Iron Works, Chattanooga, Tenn.  
Erick Co., The, Waynesboro, Pa.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Jenkins Bros., New York, N. Y.  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
National Tube Co., Pittsburgh, Pa.  
Powell Co., Wm., Cincinnati, O.  
Pratt & Coady Co., Hartford, Conn.  
York Mfg. Co., York, Pa.
- Varnish.**  
Berry Bros. Ltd., Detroit, Mich.
- Veneer Machines.**  
Titus, E. E., Petersburg, Va.
- Ventilating Apparatus. (Engineers' and Contractors.)**  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
Peck-Hammond Co., Cincinnati, O.  
Sturtevant Co., B. F., Hyde Park, Mass.
- Ventilators.**  
Merchant & Evans Co., Philadelphia, Pa.  
Pullman Auto. Ventilator Mfg. Co., York, Pa.
- Wagons. (Dump.)**  
Columbia Wagon Co., Columbia, Pa.  
Eagle Wagon Works, Auburn, N. Y.  
Troy Wagon Works Co., Troy, O.  
Western Wheelbarrow Co., Aurora, Ill.
- Wall Plaster.**  
King & Co., J. B., New York, N. Y.
- Wall Plugs. (Galvanized.)**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.  
Wicks Mfg. Co., Milton, O., Glen Cove, N. Y.
- Wall Ties.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.  
Page Woven Wire Fence Co., Adrian, Mich.
- Washers. (Ore and Phosphate.)**  
Bailey-Lobby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
- Washers. (Water-Power for Clothes.)**  
Bates & Bros. Co., D. L., Dayton, O.
- Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]**
- Water Filters. [See Filters, Water, for Domestic and Industrial Purposes.]**
- Water Meters.**  
American Valve & Meter Co., Cincinnati, O.
- Waterproofing. (For Brick Work.)**  
Barrett Mfg. Co., Philadelphia, Pa.  
Ceresit Waterproofing Co., Chicago, Ill.  
National Roofing Co., Tonawanda, N. Y.
- Waterproofing. (For Cement Mortar.)**  
Ceresit Waterproofing Co., Chicago, Ill.
- Waterproofing. (For Concrete.)**  
Barrett Mfg. Co., Philadelphia, Pa.  
Ceresit Waterproofing Co., Chicago, Ill.  
National Roofing Co., Tonawanda, N. Y.
- Waterproof Compound. (Liquid.)**  
National Roofing Co., Tonawanda, N. Y.
- Water-Softening Apparatus. (Purifying.)**  
American Water Softener Co., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Gem City Boiler Co., Dayton, O.  
N. Y. Cont. Jewell Filtr'n Co., New York, N. Y.  
Roberts Filter Mfg. Co., Philadelphia, Pa.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.  
Tucker & Laxton, Charlotte, N. C.
- Water Supply Systems. (Town, Home, Railroad, etc.)**  
Rife Engine Co., New York, N. Y.
- Water-Wheels. [See Turbines. (Hydraulic.)]**
- Water-Works Supplies and Appliances.**  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Constr. Co., Philadelphia, Pa.  
Bibb Sewer Pipe Co., Macon, Ga.  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Coldwell-Wilcox Co., Newburgh, N. Y.  
Columbian Iron Works, Chattanooga, Tenn.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
Leadite Co., Inc., The, Philadelphia, Pa.  
McWane Pipe Works, Lynchburg, Va.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Stevens' Sons Co., H., Macon, Ga.  
U. S. Cast Iron Pipe & Fdry. Co., New York, N. Y.
- Weather Strips.**  
Fullman Auto. Ventilator Mfg. Co., York, Pa.
- Wegher. (Recording, Liquid.)**  
Worthington, Henry R., New York, N. Y.
- Well Contractors. (Oil, Artesian, etc.)**  
Cook Well Co., The, St. Louis, Mo.  
Hughes Specialty Well Drill Co., Charleston, S. C.  
Stothoff Bros., Flemington, N. J.  
Sydnor Pump & Well Co., Richmond, Va.
- Well Tools and Supplies.**  
Cook Well Co., The, St. Louis, Mo.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.
- Wheels and Axles.**  
Oliver Mfg. Co., W. J., Knoxville, Tenn.
- Wheelbarrows and Trucks.**  
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Wheels. (Steel and Steel Tired.)**  
Carnegie Steel Co., Pittsburgh, Pa.
- White Lead and Linseed Oil.**  
Thompson & Co., Pittsburgh, Pa.
- Window Frames and Sashes. (Fireproof.)**  
Detroit Steel Products Co., Detroit, Mich.  
Volgtmann & Co., Chicago, Ill.
- Window Guards. (Wire.) [See Wire Goods.]**
- Windmills.**  
Baltimore Cooperage Co., Baltimore, Md.  
Caldwell Co., Inc., W. E., Louisville, Ky.
- Wire Insulating.**  
General Electric Co., Schenectady, N. Y.
- Wire. (Barbed Wire, etc.)**  
American Steel & Wire Co., Chicago, Ill.  
Roebeling's Sons Co., J. A., Trenton, N. J.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Wire Cloth. (Iron, Steel, Brass, etc.)**  
American Steel & Wire Co., Chicago, Ill.  
Caldwell & Sons Co., The H. W., Chicago, Ill.  
Meyers Mfg. Co., Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Wire Goods.**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire and Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggott & Co., Baltimore, Md.  
Meyers Mfg. Co., The, Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Wire Netting.**  
American Steel & Wire Co., Chicago, Ill.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Wire Rope.**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Contractors' Plant Mfg. Co., Inc., Buffalo, N. Y.  
Roebeling's Sons Co., J. A., Trenton, N. J.  
Williamsport Wire Rope Co., Williamsport, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Wire Rope Clips.**  
American Holist & Derrick Co., St. Paul, Minn.
- Wire Rope Thimbles.**  
Broderick & Bascom Rope Co., St. Louis, Mo.
- Wood Blocks. (For Paving and Factory Floors.)**  
U. S. Wood Preserving Co., New York, N. Y.
- Woodworking Machines.**  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Ingersoll-Rand Co., New York, N. Y.
- Wood-Fiber Plaster.**  
King & Co., J. B., New York, N. Y.
- Wood Pipe. (For Water, etc.)**  
Wyckoff & Son Co., A., Elmira, N. Y.
- Woodworking Machinery.**  
Kline, Lewis T., Alpena, Mich.  
Lane Mfg. Co., Montpelier, Vt.  
Ober Mfg. Co., Chagrin Falls, O.  
Shimer & Sons, Samuel J., Milford, Pa.  
Smith-Courtney Co., Richmond, Va.  
Smith Machine Co., H. B., Smithville, N. J.  
Wilmington Iron Works, Wilmington, N. C.
- Wrapping Paper.**  
Berlin Mills Co., Portland, Maine.
- Yarn. (Tarred Steel.)**  
American Manufacturing Co., New York, N. Y.  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.



## Alphabetical Index of Advertisers.

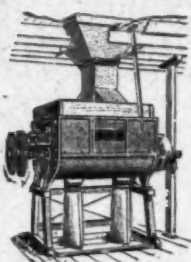
## Alphabetical Index of Advertisers.

Abraham & Root Mfg. Co.	103	Carolina, Clinchfield & Ohio	112	Gainesville Iron Works.	108	Leadite Co., Inc., The.	103	Oliver Mfg. Co., The Wm. J.	91	Standard Roofing Co.	10
Acme Steel & Malleable Iron	38	Carroll & McClure Co.	112	Galena-Signal Oil Co.	15	Lee Electric Co.	6	Osborn, Cuthbert A.	22	Standard Scale & Sup. Co.	10
Adair Machine Co., The	38	Carver Cotton Gin Co.	107	Gallatin Iron Works Co., The	10	Lefell & Co., James.	106	Otto Gas Engine Co.	6	Starr Co., B. F.	10
Albion Machine Co., The	38	Cary Spring Works.	28	Gardner Crusher Co.	1	Lefler & Co., Chas.	1	Paper Woven Wire Fence Co.	30	Steel Protected Concrete Co.	10
Albion Lubricating Co.	30	Chase Thresh. Mch. Co., J. L., Inc.	101	Gardner Gov. Co.	1	Lehigh Portland Cement Co.	24	Papin & Co., R. K.	30	Steel Rail Supply Co.	10
Albergo Condenser Co.	11	Chas. Foundry & Mfg. Co.	39	Gas Electric Co., The	1	Lehman, Chas. T.	88	Parker, G. B. D.	84	Steele & Sons, J. C.	10
Albergo Pump Co.	11	Cleveland House Wrecking Co.	108	Genl. Fire Extinguisher Co.	4	Levin, Chas. T.	88	Patton Mfg. Co., The	96	Stephens Shaper Co.	10
Albion-Central Elevator Co.	11	Chattanooga Iron & Wire Wks.	38	Gensheimer, Geo.	38	Levin, Chas. T.	88	Patterson Mfg. Co., W. W.	31	Stewart Heater Co., The	10
Allen, Herbert F. L.	38	Chattanooga Paint Co.	38	Georgia Bureau of Industries	109	Lewis, Fred. H.	22	Paulson, Linkrum & Co.	79	Stone & Webster Engineering	10
Alma-Chalmers Co.	38	Chattanooga Roofing & Fdry.	38	Georgia Car & Locomotive Co.	109	Lodge & Shultz Mach. Tool Co.	22	Paxon Co., J. W.	38	Stratton & Bragg Co.	10
Alma Portland Cement Co.	38	Chesapeake Belting Co.	16	Gibbs Machinery Co.	13	Lombard Iron Works	10	Peck-Hammond Co.	2	Strickland Mch. Co.	10
Aluminum Co. of America	43	Chesapeake Iron Works	30	Gilbert & Sons Brass Fdy. Co.	4	Lock Box No. 374.	88	Peterson & Co., Chas. G.	44	Stroudsburg Engine Works	10
Amberburg Hydraulic Construction	26	Chesapeake Steamship Co.	32	Gilman Pipe & Fdry. Co.	103	Lockwood, Greene & Co.	28	Pettit, Jr., Chas. Godfrey	22	Sturtevant & Co., G. L.	10
Amelting Prospecting Co., H. R.	1	Chesapeake Graphite Co.	32	Glenn, Wm. S.	103	Lockwood, Greene & Co.	28	Pow, Arthur	22	Summers & Co., L. L.	10
Amelting Prospecting Co., H. R.	1	Chicago House Wrecking Co.	108	Gould Co.	104	Lowell Crayon Co.	107	Power & Mining Machy. Co.	1	Sweet's Steel Co.	10
American Blower Co.	13	Chicago Pneumatic Tool Co.	94	Gould Co.	104	Lowell Crayon Co.	107	Power Specialty Co.	12	Syrden Pump & Well Co., Inc.	10
American Bridge Co. of New York	1	Church & Dwight Co.	2	Graham, Edgar M.	31	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Syrden Pump & Well Co., Inc.	10
American Cast Iron Pipe Co.	102	Cincinnati Frog & Switch Co.	91	Graves, Klumman & Co.	19	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tait-Nordmeyer Eng. Co.	10
American Compressor & Pump Co.	94	Cincinnati Iron & Steel Co.	91	Graves, Klumman & Co.	19	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tampa Mch. Exchange	10
American Cotton Oil Co.	107	Cincinnati Sheet Metal & Roofing Co.	36	Gregory Electric Co.	88	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Taplin-Rice-Clerkin Co., The	10
American Engine Co.	33	Classified Opportunities.	32	Griffith & Wedge Co., The	5	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Taylor Sons Co., Chas.	10
American Engineering Co.	97	Cleveland Belting & Mch. Co.	37	Gulf Coast Const. Co.	23	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Cent. R. Co.	10
American Frog & Switch Co.	90	Clinchfield Fuel Corp.	2	Gulftown Creosoting Co.	29	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Hoist & Derrick Co.	97	Clinchfield Portland Cement	2	Hague, John.	25	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Locomotive Co.	31	Clyde, R. P.	25	Hall Grindstone Co.	122	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Machine Co.	31	Coldwell-Wilcox Co.	103	Halsey & Co., N. W.	103	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Mfg. Co.	79	Col. Mfg. Co., R. D.	44	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Pipe & Constr. Co.	101	Coleman, Dud. F.	85	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Process Co.	10	Columbia Incandescent Lamp Co.	10	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Pump Co., The	10	Columbia Wagon Co.	103	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Railway Supply Co.	123	Columbia Iron Works	98	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Rolling Mill Co.	123	Columbia Rope Co.	16	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Steel & Tin Plate Co.	34	Columbian Steel & Wire Co.	14	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Sheet & Wire Co.	34	Columbian Steel & Wire Co.	14	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Supply Co. of Providence, R. I.	107	Concrete Steel Engineering Co.	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Valve & Meter Co.	38	Consolidation Coal Co., Inc.	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
American Water Works Co.	38	Continental Gin Co.	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
Armstrong Mfg. Co., The	38	Continental Plant Mfg. Co.	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
Arnold Co., The	38	Copeland & Ingalls Shale Brick	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
Arundel Sand & Gravel Co.	34	Copeland & Ingalls Shale Brick	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
Asphalt Ready Roofing Co.	38	Copeland & Ingalls Shale Brick	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
Asphalt Ready Roofing Co.	38	Copeland & Ingalls Shale Brick	3	Harlow Co., James H.	22	Lowell Crayon Co.	107	Piedmont Electric Co.	2	Tenn. Coal, Iron & R. R.	10
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Cloth, Paper,  
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Write for our pamph-  
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**Standard Cotton Goods and Specialties**

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light tin plate necessary for tin-  
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INGOT IRON**Not since the discontinuance of  
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MOST DURABLE TERNE  
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Fig. 91



Fig. 57



Fig. 105

**A Valve is a Small Thing**but if it gets out of order  
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and possibly damage in any  
building—office, hotel, hos-  
pital, mill, factory, etc.**Kennedy Valves  
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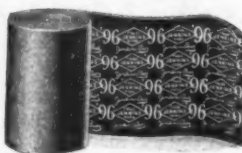
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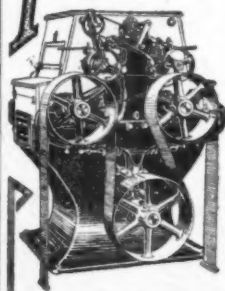
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